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**Crustal Dynamics Project:
Catalogue of Site Information**

Crustal Dynamics Project Staff

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Catalogue of Site Information**

**Crustal Dynamics Project Staff
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National Aeronautics
and Space Administration

Scientific and Technical
Information Division

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Acronyms

AFGL	Air Force Geophysics Laboratory
ARELAS	Arequipa, Peru Laser Station
ARIES	Astronomical Radio Interferometric Earth Surveying
AUSLAS	Graz, Austria Laser Station
AZ-EL	Azimuth-Elevation
BFEC	Bendix Field Engineering Corporation
BIH	Bureau International de l'Heure
BLM	Bureau of Land Management
BM	Bench Mark
CDDIS	Crustal Dynamics Data Information System
CDP	Crustal Dynamics Project
CERGA	Centre d'Etudes et de Recherches Geodynamiques et Astronomiques (France)
CIO	Conventional International Origin
DBMS	Data Base Management System
DET	Detachment
DIS	Data Information System
DMA	Defence Mapping Agency
DMAHTC	Defence Mapping Agency Hydrographic and Topographic Center
DOD	Department of Defence
DSN	Deep Space Network
DSS	Deep Space Station
ED	European Datum
ESA	European Space Agency
FAA	Federal Aviation Administration
FINLAS	Metsahovi, Finland Laser Station
GMT	Greenwich Mean Time
GORF	Goddard Optical Research Facility
GP	Gun Position
GPS	Global Positioning System
GRGS	Groupe de Recherches de Geodesie Speciale (France)
GRELAS	Dionysos, Greece Laser Station
GSFC	Goddard Space Flight Center
GSS	Geodetic Survey Squadron
HO	Haystack Observatory
HOLLAS	Haleakala Laser Station
HRAS	Harvard Radio Astronomy Station
HTC	Hydrographic and Topographic Center

Acronyms (Continued)

IAG	International Association of Geodesy
IAU	International Astronomical Union
ICCG	Interagency Coordinating Committee for Geodynamics
ICG	Inter-Union Commission of Geodynamics
IFAG	Institut fur Angewandte Geodasie (West Germany)
INTA	Instituto Nacional de Tecnica Aeroespacial (Spain)
IUGG	International Union of Geodesy and Geophysics
JHD	Japanese Hydrographic Department
JPL	Jet Propulsion Laboratory
JSC	Johnson Space Center
KOOLAS	Kootwijk, Netherlands Laser Station
LAGEOS	LAser GEOdynamics Satellite
LLR	Lunar Laser Ranging
LURE	LUnar Ranging Experiment
MACLAS-1	McDonald Laser Station One (2.7 meter telescope)
MACLAS-2	McDonald Laser Station Two (MLRS)
MATLAS	Mater, Italy Laser Station
MERIT	Monitoring of Earth Rotation and Intercomparison of Techniques
MLRS	McDonald Laser Ranging System
MOBLAS	MOBile LASer Ranging System
MSL	Mean Sea Level
MTLRS	Modular Transportable Laser Ranging System
MV	Mobile VLBI
NAD	North American Datum
NASA	National Aeronautics and Space Administration
NASCOM	NASA COMMUNICATIONS Network
NATMAP	NATIONAL MAPPING
NCMN	National Crustal Motion Network
NEROC	North East Rotation Observatory Corporation
NGS	National Geodetic Survey
NGVD	National Geodetic Vertical Datum
NOAA	National Oceanic and Atmospheric Administration
NOS	National Ocean Survey
NRAO	National Radio Astronomy Observatory
NRL	Naval Research Laboratory]
NWS	National Weather Service
ORRLAS	Orroral, Australia Laser Station
ORT	Optical Ranging Telescope
OSGB	Ordinance Survey of Great Britain
OSTA	Office of Space and Terrestrial Applications
OVRO	Owens Valley Radio Observatory

Acronyms (Continued)

PAFB	Patrick Air Force Base
POLARIS	POLar motion Analysis by Radio Interferometric Surveying
PPME	Pacific Plate Motion Experiment
RM	Reference Monument
RMT	Reference Monument
RRL	Radio Research Laboratories, Japan
SAFE	San Andreas Fault Experiment
SAO	Smithsonian Astrophysical Observatory
SFA	San Fernando Monument Information
SHO	Simosato Hydrographic Observatory
SHOLAS	Simosato, Japan Laser Station
SLR	Satellite Laser Ranging
STALAS	Stationary Laser Station, GSFC
STDN	Spaceflight Tracking and Data Network
TLRS	Transportable Laser Ranging System
TVDS	Transportable VLBI Data System
USAF	United States Air Force
USC & GS	United States Coast and Geodetic Survey
USGS	United States Geological Survey
USNO	United States Naval Observatory
VAFB	Vandenberg Air Force Base
VLBI	Very Long Baseline Interferometry
WCPT	West Coast Precision Traverse
WETLAS	Wettzell, West Germany Laser Station
WGS	World Geodetic System

SECTION 1. INTRODUCTION

1.1 Introduction

This catalogue is designed to provide descriptions and occupation histories of the observing sites utilized by NASA's Crustal Dynamics Project. These sites are occupied by the Project for obtaining the precise geodetic measurements required for the study of crustal movements and deformation as well as the determination of earth rotation and polar motion values.

The document consists of four sections and one appendix following this introductory section. Tables of the scientific purposes of the sites as well as the scientific objectives of the selected Project investigators are included in Section 2. Section 3 contains several tables listing all current and future Crustal Dynamics Project and cooperating sites (as well as those historical sites whose data is still considered useful to the Project) in order of site name, Project-assigned site number, monument number, geographic region, and tectonic plate, respectively. Also included in Section 3 are several maps locating the Crustal Dynamics Project sites. Section 4 contains the alphabetical listing of all sites which have been occupied prior to publication by fixed and mobile laser and VLBI systems. The user should note that not all sites listed in Section 3 are included in Section 4 of the document. However, the modular organization of the site catalogue provides for the addition of new sites and the deletion or revision of selected material without the need to rewrite and redistribute the main document. Section 5 is a reference to several documents used in the preparation of this site catalogue. Appendix A contains figures illustrating general survey and coordinate information.

The information provided for each site includes site location and geographic region, primary scientific purposes, physical description, applicable topographic map, geological province, and local geography. The number, type, inscription, system capability, and geodetic parameters are included for each observing monument located at a particular site. Differential coordinates and their sources have been listed with this monument information. A sketch detailing the positions of the observing and reference monuments is also included for many of the sites. In addition, past occupation information is listed for each site.

Several conventions used in the document should be noted. Confusion has arisen at times regarding the convention of elevation being above sea level and height being above a geoid. The values detailed in this document are as specific as possible in this regard. Differential coordinates between monuments are, where available, given in north, east, and up, a planar coordinate system, for distances under 100 meters. For greater distances, differential coordinates are given in X, Y, and Z, the rectangular, earth-centered, coordinate system. This method accounts for the curvature of the earth. Monument numbers were occasionally established after the placement of the actual monument disk; therefore, the disk inscription may or may not contain the assigned number. The monument numbers of the fixed VLBI antennas (or radio telescopes) usually refer to the intersection of the antenna axes or the optical center of the telescope. Deviations are explained within the descriptive information for the monument.

This catalogue was prepared under the direction of the Crustal Dynamics Project by Elizabeth A. Creamer, Carey E. Noll, Henry G. Linder, Gilbert D. Mead, Richard J. Allenby, Herbert V. Frey, Terri G. Marquiss (RMS), and Douglas

Bennett (SAR). In addition, comments and corrections were received from other Project personnel and Project-affiliated groups such as NGS, BFEC, JPL, SAO, and many of the participating foreign institutions. In particular, the authors wish to thank Michael L. Morrison and James E. Pettey of NGS for their contributions to the geodetic and differential coordinate information, William E. Strange and Gerald L. Mader, of NGS for his previous corrections and additions to the geodetic information, and Vaughn E. Nelson of BFEC for his contribution of site sketches, differential coordinates, and diagrams contained in Appendix A. Updates to this version of the document will be distributed on an as needed basis. These pages will include revisions to existing information as well as new site sections for which complete descriptions were not provided in this version of the catalogue.

This site information is also available through the Crustal Dynamics Project's Data Information System (DIS). Additional information about the DIS may be obtained from the Quick-Look Guide to the Crustal Dynamics Data Information System (NASA TM 87818).

This version supersedes any previously published copies of the catalogue. The purpose of this document is to provide a general description of the Crustal Dynamics Project sites; it is not intended as a working document for the construction of differential station positions. For example, NGS warns that the NAD27 coordinate system is known to have distortions greatly in excess of the implied precision of the tabulated coordinates. It is therefore inappropriate to use these coordinates for comparison of intersite vectors with other geodetic techniques. The positions were tabulated to five significant digits solely for the recovery of local (intrasite) vectors with subcentimeter precision. For more detailed information, the reader should consult the references listed in the bibliography (Section 5). In addition, readers of this text, as well as users of the DIS, are encouraged to transmit further corrections, questions, and comments to:

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SECTION 2. INVESTIGATOR INFORMATION

Table 2.1

Scientific Purposes of Sites

Site Name	Site Location	SLR	VLBI	A	B	C	D	E	F	G	H
Algonquin	Algonquin, Canada		x	x			x				
Arequipa	Arequipa, Peru	x			x	x	x				
Askites	Askites, Greece	x						x			
Bar Giyyora	Bar Giyyora, Israel	x				x		x	x		
Basovizza	Basovizza, Trieste, Italy	x					x				
Bear Lake	Bear Lake, UT	x		x							
Black Butte	Black Butte, CA		x	x							
Cabo San Lucas	Cabo San Lucas, Mexico	x		x							
Cape Yakataga	Cape Yakataga, AK		x	x							
Cerro Tololo	Cerro Tololo, Chile	x			x	x					
Chilbolton	Chilbolton, England		x							x	
Deadman Lake	Deadman Lake, CA		x	x							
Demirkoy	Demirkoy, Turkey	x						x			
Dionysos	Athens, Greece	x						x	x		
Diyarbakir	Diyarbakir, Turkey	x						x			
Easter Island	Easter Island, Chile	x			x		x				
Effelsberg	Bonn, West Germany		x		x						
Ely	Ely, NV		x	x		x					
Ensenada	Ensenada, Mexico	x		x							
Fairbanks	Fairbanks, AK		x	x	x						
Flagstaff	Flagstaff, AZ	x	x	x							x
Fort Davis	Fort Davis, TX		x	x	x	x	x				x
Fort Ord	Fort Ord, CA		x	x							
Goldstone Mars	Goldstone, CA	x	x	x	x	x	x				x
Goldstone Vnus	Goldstone, CA	x	x	x	x	x	x				x
Grasse	Grasse, France	x			x	x	x				
Graz	Graz, Austria	x					x				
Green Bank	NRAO, Green Bank, WV		x		x	x	x		x		
Greenbelt	GORF, GSFC, Greenbelt, MD	x			x	x	x		x		
Haleakala	Haleakala Obs., Maui HI	x			x	x	x		x		
Hat Creek	Hat Creek Obs., Cassel, CA		x	x		x					
Helwan	Helwan, Egypt	x						x			
Herstmonceux	Herstmonceux, England	x			x	x	x				
Huahine	Huahine, French Polynesia	x			x	x	x				
Iquique	Iquique, Chile	x			x	x					

Table 2.1 (Continued)

Scientific Purposes of Sites

Site Name	Site Location	SLR	VLBI	A	B	C	D	E	F	G	H
Karitsa	Karitsa, Greece	x						x			
Kashima	Kashima, Japan		x		x		x			x	
Katavia	Katavia, Rhodes, Greece	x						x			
Kodiak	Kodiak, AK		x	x							
Kokee Park	Kokee Park, HI		x		x						
Kootwijk	Apeldoorn, Netherlands	x			x	x	x	x	x		
Kwajalein	Kwajalein, Marshall Islands	x	x		x	x					
La Jolla	La Jolla, CA		x	x							
Lampedusa	Lampedusa, Italy	x			x			x			
Madrid	Madrid, Spain		x		x						
Mammoth Lakes	Mammoth Lakes, CA		x	x							
Maryland Point	Maryland Point, MD		x		x	x				x	
Matera	Matera, Italy	x	x		x	x	x	x	x	x	
Mazatlan	Mazatlan, Sinola, Mexico	x		x	x	x	x				
McDonald	McDonald Obs., Ft Davis, TX	x		x	x	x	x		x		x
Melengiclik	Melengiclik, Turkey	x						x			
Metsahovi	Metsahovi, Finland	x			x	x	x				
Mojave	Mojave, CA	x	x	x	x	x				x	x
Monte Generoso	Monte Generoso, Switzerland	x						x			
Monument Peak	Monument Peak, CA	x	x	x	x	x	x				x
Nome	Nome, AK		x	x							
Ocotillo	Ocotillo, CA		x	x							
Onsala	Onsala, Sweden		x								
Orroral	Orroral Valley, Australia	x			x	x	x		x		
Otay Mountain	Otay Mountain, CA	x	x	x	x						
Owens Valley	OVRO, Big Pine, CA	x	x	x	x	x	x				x
Palos Verdes	Palos Verdes, CA		x	x							
Pasadena	JPL, Pasadena, CA	x	x	x							x
Pearblossom	Pearblossom, CA		x	x							
Penticton	Penticton, Canada		x			x					
Pinyon Flat	Pinyon Flat, CA		x	x							
Platteville	Platteville, CO	x	x	x	x	x	x				x
Point Reyes	Point Reyes, CA		x	x							
Presidio	San Francisco, CA		x	x							
Punta Sa Menta	Punta Sa Menta, Italy	x						x			

Table 2.1 (Continued)

Scientific Purposes of Sites

Site Name	Site Location	SLR	VLBI	A	B	C	D	E	F	G	H
Quincy	Quincy, CA	x	x	x	x	x	x				x
Richmond	Perrine, FL		x		x	x	x				
Roumelli	Roumelli, Crete, Greece	x						x			
San Fernando	San Fernando, Spain	x							x		
Sand Point	Sand Point, AK		x	x							
Santa Paula	Santa Paula, CA		x	x							
Santiago	Santiago, Chile	x			x	x					
Sao Paulo	Sao Paulo, Brazil		x		x		x				
Shanghai	Shanghai Obs., China	x	x		x				x		x
Simosato	Simosato Hydro. Obs., Japan	x			x	x	x		x		
Socorro	Socorro Island, Mexico	x		x	x						
Sourdough	Sourdough, AK		x	x							
Tidbinbilla	Tidbinbilla, Australia		x		x						
Vandenberg	Vandenberg AFB, CA	x	x	x	x	x					x
Vernal	Vernal, UT	x	x	x							x
Westford	Haystack Obs., Westford, MA	x	x		x	x	x			x	x
Wettzell	Wettzell, West Germany	x	x		x	x	x	x	x	x	
Whitehorse	Whitehorse, Canada		x	x							
Xrisokalaria	Xrisokalaria, Greece	x						x			
Yaragadee	Yaragadee, Australia	x			x	x	x				
Yellowknife	Yellowknife, Canada		x	x							
Yigilca	Yigilca, Turkey	x						x			
Yozgat	Yozgat, Turkey	x						x			
Yuma	Yuma Proving Grounds, AZ	x	x	x							x
Zimmerwald	Bern, Switzerland	x					x				

Scientific Purposes

- A. Regional deformation, Western US and Baja California
- B. Global plate motion
- C. Internal plate deformation/plate stability
- D. Polar motion/earth rotation
- E. Mediterranean tectonics
- F. SLR technique development
- G. VLBI technique development
- H. SLR/VLBI baseline intercomparisons

Table 2.2

Scientific Objectives of Selected Investigations

PI's	Institution	A	B	C	D	E	F
Aardoom Agnew Barlier Beavan Bender	Netherlands UCSD France Lamont NBS	x x x			 x	 x	x
Bilham Boucher Bowin Brown Burke	Lamont France Woods Hole Cornell Houston	 x		 x	 x	x x x	
Calderon Chao Clark Dickey Eubanks	Mexico GSFC GSFC JPL JPL	x x	 x x	 x	 x x		
Fanselow Feissel Frey Hager Harrison	JPL France GSFC Caltech Miami	x x x	 x x	 x	 x		
Humphreys Jackson Jeudy Jordan Kahle	Oregon UCLA Canada MIT Switzerland	x x x	 x x				 x
Kaula Kausel King Lambert Lerch	NGS/NOAA Chile MIT Canada GSFC	x x	 x	 x	 x		
Li Lyzenga McCarthy Minster Mueller	MIT JPL USNO Science Horizon Ohio State	x x x	 x x		 x		

Table 2.2 (Continued)

Scientific Objectives of Selected Investigations

PI's	Institution	A	B	C	D	E	F
Ness O'Connell Rosborough Rosen Rundle	Oregon State Harvard Colorado AER, Inc. Sandia	x x x	 x x 	 x 	 x x 	 	
Schutz Shapiro Shelus Smith Solomon	Texas Harvard Texas GSFC MIT	 	x x x x	 x x	 x 	 	
Stein Stolz Tapley Toksoz Turcotte	Northwestern Australia Texas MIT Cornell	x x	x x 	x 	 x 	x 	 x
Veillet Wahr Ward Williams Wilson	France Colorado UC Santa Cruz JPL Germany	 x 	 	 	x x x 	 	 x
Wilson Ye Shu-Hua Yoder Zerbini	Texas China JPL Italy	 	 x 	 	 x 	 	 x

Scientific Objectives

- A. Regional deformation, western North America
- B. Global plate motion
- C. Internal plate deformation/plate stability
- D. Polar motion/earth rotation
- E. Caribbean tectonics
- F. Mediterranean tectonics

SECTION 3. SITE LISTS AND MAPS

Table 3-1

Crustal Dynamics Project Sites Listed by Site Name

Site Name	Site Location	Site Number	Page
Algonquin	Algonquin, Ontario, Canada	67	4-ALGNQN-1
Arequipa	Arequipa, Peru	98	4-AREQIP-1
Askites	Askites, Greece	674	4-ASKITS-1
Bar Giyyora	Bar Giyyora, Israel	857	4-BGYORA-1
Basovizza	Basovizza, Trieste, Italy	854	4-BASOVZ-1
Bear Lake	Bear Lake, UT	22	4-BEAR L-1
Black Butte	Black Butte Mountain, CA	206	4-BL BUT-1
Cabo San Lucas	Cabo San Lucas, Baja, Mexico	70	4-CABO-1
Cape Yakataga	Cape Yakataga, AK	805	4-CYAKTG-1
Cerro Tololo	Cerro Tololo, Chile	892	4-C TOLO-1
Chilbolton	Chilbolton, United Kingdom	116	4-CHLBLT-1
Deadman Lake	Deadman Lake, CA	205	4-DEADMN-1
Demirkoy	Demirkoy, Turkey	688	4-DEMRY-1
Dionysos	National Technical Univ., Athens, Greece	855	4-DIONYS-1
Diyarbakir	Diyarbakir, Turkey	680	4-DYRBKR-1
Easter Island	Easter Island, Chile	96	4-EASTER-1
Effelsberg	Bonn, West Germany	143	4-EFLBRG-1
Ely	Ely, NV	26	4-ELY-1
Ensenada	Ensenada, Baja, Mexico	219	4-ENSNDA-1
Fairbanks	Fairbanks, AK	61	4-FRBNKS-1
Flagstaff	Flagstaff, AZ	27	4-FLGSTF-1
Fort Davis	Fort Davis, TX	33A	4-FT DAV-1
Fort Ord	Fort Ord, CA	12	4-FT ORD-1
Goldstone Mars	Goldstone, CA	8C	4-GOLD M-1
Goldstone Venus	Goldstone, CA	8A	4-GOLD V-1
Grasse	Grasse, France	142	4-GRASSE-1
Graz	Graz, Austria	610	4-GRAZ-1
Green Bank	NRAO, Green Bank, WV	38	4-GRNBK-1
Greenbelt	GORF, GSFC, Greenbelt, MD	39	4-GSFC-1
Haleakala	Lure Obs., Mount Haleakala, Maui, HI	90	4-HALEAK-1
Hat Creek	Hat Creek Radio Astro. Obs., Cassel, CA	714	4-HAT CR-1
Helwan	Helwan, Egypt	650	4-HELWAN-1
Herstmonceux	Royal Greenwich Obs., Great Britain	880	4-HRSTMN-1
Huahine	Huahine, Society Is, French Polynesia	92	4-HUAHNE-1
Iquique	Iquique, Chile	891	4-IQUIQE-1
Karitsa	Karitsa, Greece	675	4-KRITSA-1
Kashima	Kashima, Japan	138	4-KSHIMA-1
Katavia	Katavia, Rhodes, Greece	677	4-KATVIA-1
Kodiak	Kodiak, AK	803	4-KODIAK-1
Kokee Park	Kokee Park, Kauai, HI	990	4-KOKEE-1
Kootwijk	Kootwijk Obs., Apeldoorn, Netherlands	118	4-KOTWJK-1
Kwajalein	Kwajalein, Marshall Islands	136	4-KWAJLN-1

Table 3-1 (Continued)

Crustal Dynamics Project Sites Listed by Site Name

Site Name	Site Location	Site Number	Page
La Jolla	La Jolla, CA	2	4-LA JOL-1
Lampedusa	Lampedusa, Italy	848	4-LMPDSA-1
Madrid	Madrid, Spain	115	4-MADRID-1
Mammoth Lakes	Mammoth Lakes, CA	720	4-MAMOTH-1
Maryland Point	Maryland Point, MD	40	4-MD PT-1
Matera	Matera, Italy	850	4-MATERA-1
Mazatlan	Mazatlan, Sinaloa, Mexico	71	4-MZTLN-1
McDonald	McDonald Observatory, Fort Davis, TX	33B	4-MCDNLD-1
Melengiclik	Melengiclik, Turkey	684	4-MELEN-1
Metsahovi	Kirkkonummi, Finland	860	4-MTSHOV-1
Mojave	Barstow, CA	8B	4-MOJAVE-1
Monte Generoso	Monte Generoso, Switzerland	883	4-MGNRSO-1
Monument Peak	Mount Laguna, CA	701	4-MON PK-1
Nome	Nome, AK	801	4-NOME-1
Ocotillo	Ocotillo, CA	201	4-OCTILO-1
Onsala	Onsala, Sweden	120	4-ONSALA-1
Orroral	Orroral Valley, Australia	134	4-ORORAL-1
Otay Mountain	Otay Mountain, San Diego, CA	1	4-OTAY-1
Owens Valley	Owens Valley Radio Obs., Big Pine, CA	11	4-OVRO-1
Palos Verdes	Palos Verdes, CA	4	4-P VRDS-1
Pasadena	Jet Propulsion Lab, Pasadena, CA	6	4-JPL-1
Pearblossom	Pearblossom, CA	7	4-PRBLSM-1
Penticton	Penticton, British Columbia, Canada	69	4-PNTCN-1
Pinyon Flat	Pinyon Flat, CA	204	4-PINYON-1
Platteville	Platteville, CO	24	4-PLATVL-1
Point Reyes	Point Reyes, CA	212	4-PT REY-1
Presidio	San Francisco, CA	13	4-PRSDIO-1
Punta Sa Menta	Punta Sa Menta, Cagliari, Italy	853	4-PUNTA-1
Quincy	Quincy, CA	14	4-QUINCY-1
Richmond	Perrine, FL	43	4-RCHMND-1
Roumelli	Roumelli, Crete, Greece	672	4-ROUMLI-1
Sand Point	Sand Point, AK	802	4-SND PT-1
San Fernando	San Fernando, Spain	640	4-SN FER-1
Santa Paula	Santa Paula, CA	405	4-S PAUL-1
Santiago	Santiago, Chile	99	4-SNTAGO-1
Sao Paulo	Sao Paulo, Brazil	102	4-SAO PL-1
Shanghai	Shanghai Obs., Peoples Republic Of China	660	4-SHNGHI-1
Simosato	Simosato Hydrographic Observatory, Japan	870	4-SMSATO-1
Socorro Island	Socorro, Revillagigedo Islands, Mexico	821	4-SOCORO-1
Sourdough	Sourdough, AK	804	4-SRDOGH-1
Tidbinbilla	Tidbinbilla, Australia	131	4-TBILLA-1
Vandenberg	Vandenberg Air Force Base, CA	9	4-VANBRG-1

Table 3-1 (Continued)

Crustal Dynamics Project Sites Listed by Site Name

Site Name	Site Location	Site Number	Page
Vernal	Vernal, UT	413	4-VERNAL-1
Westford	Haystack Observatory, Westford, MA	41	4-WSTFRD-1
Wettzell	Wettzell, West Germany	119	4-WETZEL-1
Whitehorse	Whitehorse, Yukon Territory, Canada	806	4-WHRSE-1
Xrisokalaria	Xrisokalaria, Greece	676	4-XRISOK-1
Yaragadee	Yaragadee, Australia	133	4-YARGAD-1
Yellowknife	Yellowknife, Northwest Territory, Canada	408	4-YLWKNF-1
Yigilca	Yigilca, Turkey	683	4-YIGLCA-1
Yozgat	Yozgat, Turkey	682	4-YOZGAT-1
Yuma	Yuma Proving Grounds, AZ	202	4-YUMA-1
Zimmerwald	Bern, Switzerland	882	4-ZIMMER-1

Table 3-2

Crustal Dynamics Project Sites Listed by Site Number

Site Number	Site Name	Site Location	Page
1	Otay Mountain	Otay Mountain, San Diego, CA	4-OTAY-1
2	La Jolla	La Jolla, CA	4-LA JOL-1
4	Palos Verdes	Palos Verdes, CA	4-P VRDS-1
6	Pasadena	Jet Propulsion Lab, Pasadena, CA	4-JPL-1
7	Pearblossom	Pearblossom, CA	4-PRBLSM-1
8A	Goldstone Venus	Goldstone, CA	4-GOLD V-1
8B	Mojave	Barstow, CA	4-MOJAVE-1
8C	Goldstone Mars	Goldstone, CA	4-GOLD M-1
9	Vandenberg	Vandenberg Air Force Base, CA	4-VANBRG-1
11	Owens Valley	Owens Valley Radio Obs., Big Pine, CA	4-OVRO-1
12	Fort Ord	Fort Ord, CA	4-FT ORD-1
13	Presidio	San Francisco, CA	4-PRSDIO-1
14	Quincy	Quincy, CA	4-QUINCY-1
22	Bear Lake	Bear Lake, UT	4-BEAR L-1
24	Platteville	Platteville, CO	4-PLATVL-1
26	Ely	Ely, NV	4-ELY-1
27	Flagstaff	Flagstaff, AZ	4-FLGSTF-1
33A	Fort Davis	Fort Davis, TX	4-FT DAV-1
33B	McDonald	McDonald Observatory, Fort Davis, TX	4-MCDNLD-1
38	Green Bank	NRAO, Green Bank, WV	4-GRBNBK-1
39	Greenbelt	GORF, GSFC, Greenbelt, MD	4-GSFC-1
40	Maryland Point	Maryland Point, MD	4-MD PT-1
41	Westford	Haystack Observatory, Westford, MA	4-WSTFRD-1
43	Richmond	Perrine, FL	4-RCHMND-1
61	Fairbanks	Fairbanks, AK	4-FRBNKS-1
67	Algonquin	Algonquin, Ontario, Canada	4-ALGNQN-1
69	Penticton	Penticton, British Columbia, Canada	4-PNTCN-1
70	Cabo San Lucas	Cabo San Lucas, Baja, Mexico	4-CABO-1
71	Mazatlan	Mazatlan, Sinaloa, Mexico	4-MZTLN-1
90	Haleakala	Lure Obs., Mount Haleakala, Maui, HI	4-HALEAK-1
92	Huahine	Huahine, Society Is, French Polynesia	4-HUAHNE-1
96	Easter Island	Easter Island, Chile	4-EASTER-1
98	Arequipa	Arequipa, Peru	4-AREQIP-1
99	Santiago	Santiago, Chile	4-SNTAGO-1
102	Sao Paulo	Sao Paulo, Brazil	4-SAO PL-1
115	Madrid	Madrid, Spain	4-MADRID-1
116	Chilbolton	Chilbolton, United Kingdom	4-CHLBLT-1
118	Kootwijk	Kootwijk Obs., Apeldoorn, Netherlands	4-KOTWJK-1
119	Wettzell	Wettzell, West Germany	4-WETZEL-1
120	Onsala	Onsala, Sweden	4-ONSALA-1
131	Tidbinbilla	Tidbinbilla, Australia	4-TBILLA-1
133	Yaragadee	Yaragadee, Australia	4-YARGAD-1

Table 3-2 (Continued)

Crustal Dynamics Project Sites Listed by Site Number

Site Number	Site Name	Site Location	Page
134	Orroral	Orroral Valley, Australia	4-ORORAL-1
136	Kwajalein	Kwajalein, Marshall Islands	4-KWAJLN-1
138	Kashima	Kashima, Japan	4-KSHIMA-1
142	Grasse	Grasse, France	4-GRASSE-1
143	Effelsberg	Bonn, West Germany	4-EFLBRG-1
201	Ocotillo	Ocotillo, CA	4-OCTILO-1
202	Yuma	Yuma Proving Grounds, AZ	4-YUMA-1
204	Pinyon Flat	Pinyon Flat, CA	4-PINYON-1
205	Deadman Lake	Deadman Lake, CA	4-DEADMN-1
206	Black Butte	Black Butte Mountain, CA	4-BL BUT-1
212	Point Reyes	Point Reyes, CA	4-PT REY-1
219	Ensenada	Ensenada, Baja, Mexico	4-ENSNDA-1
405	Santa Paula	Santa Paula, CA	4-S PAUL-1
408	Yellowknife	Yellowknife, Northwest Territory, Canada	4-YLWKNF-1
413	Vernal	Vernal, UT	4-VERNAL-1
610	Graz	Graz, Austria	4-GRAZ-1
640	San Fernando	San Fernando, Spain	4-SN FER-1
650	Helwan	Helwan, Egypt	4-HELVAN-1
660	Shanghai	Shanghai Obs., Peoples Republic Of China	4-SHNGHI-1
672	Roumelli	Roumelli, Crete, Greece	4-ROUMLI-1
674	Askites	Askites, Greece	4-ASKITS-1
675	Karitsa	Karitsa, Greece	4-KRITSA-1
676	Xrisokalaria	Xrisokalaria, Greece	4-XRISOK-1
677	Katavia	Katavia, Rhodes, Greece	4-KATVIA-1
680	Diyarbakir	Diyarbakir, Turkey	4-DYRBKR-1
682	Yozgat	Yozgat, Turkey	4-YOZGAT-1
683	Yigilca	Yigilca, Turkey	4-YIGLCA-1
684	Melengiclik	Melengiclik, Turkey	4-MELEN-1
688	Demirkoy	Demirkoy, Turkey	4-DEMRKY-1
701	Monument Peak	Mount Laguna, CA	4-MON PK-1
714	Hat Creek	Hat Creek Radio Astro. Obs., Cassel, CA	4-HAT CR-1
720	Mammoth Lakes	Mammoth Lakes, CA	4-MAMOTH-1
801	Nome	Nome, AK	4-NOME-1
802	Sand Point	Sand Point, AK	4-SND PT-1
803	Kodiak	Kodiak, AK	4-KODIAK-1
804	Sourdough	Sourdough, AK	4-SRDOGH-1
805	Cape Yakataga	Cape Yakataga, AK	4-CYAKTG-1
806	Whitehorse	Whitehorse, Yukon Territory, Canada	4-WHRSE-1
821	Socorro Island	Socorro, Revillagigedo Islands, Mexico	4-SOCORO-1
848	Lampedusa	Lampedusa, Italy	4-LMPDSA-1
850	Matera	Matera, Italy	4-MATERA-1
853	Punta Sa Menta	Punta Sa Menta, Cagliari, Italy	4-PUNTA-1

Table 3-2 (Continued)

Crustal Dynamics Project Sites Listed by Site Number

Site Number	Site Name	Site Location	Page
854	Basovizza	Basovizza, Trieste, Italy	4-BASOVZ-1
855	Dionysos	National Technical Univ., Athens, Greece	4-DIONYS-1
857	Bar Giyyora	Bar Giyyora, Israel	4-BGYORA-1
860	Metsahovi	Kirkkonummi, Finland	4-MTSHOV-1
870	Simosato	Simosato Hydrographic Observatory, Japan	4-SMSATO-1
880	Herstmonceux	Royal Greenwich Obs., Great Britain	4-HRSTMN-1
882	Zimmerwald	Bern, Switzerland	4-ZIMMER-1
883	Monte Generoso	Monte Generoso, Switzerland	4-MGNRSO-1
891	Iquique	Iquique, Chile	4-IQUIQE-1
892	Cerro Tololo	Cerro Tololo, Chile	4-C TOLO-1
990	Kokee Park	Kokee Park, Kauai, HI	4-KOKEE-1

Table 3-3

Crustal Dynamics Project Sites Listed by Monument Number

Mon. Number	Site Number	Site Name	Site Location	Page
1311	990	Kokee Park	Kokee Park, Kauai, HI	4-KOKEE-2
1513	8A	Goldstone Venus	Goldstone, CA	4-GOLD V-2
1514	8C	Goldstone Mars	Goldstone, CA	4-GOLD M-2
1543	131	Tidbinbilla	Tidbinbilla, Australia	4-TBILLA-2
1561	115	Madrid	Madrid, Spain	4-MADRID-2
1642	131	Tidbinbilla	Tidbinbilla, Australia	4-TBILLA-3
1856	138	Kashima	Kashima, Japan	4-KSHIMA-2
4047	61	Fairbanks	Fairbanks, AK	4-FRBNKS-2
4968	136	Kwajalein	Kwajalein, Marshall Islands	4-KWAJLN-2
7051	14	Quincy	Quincy, CA	4-QUINCY-2
7061	96	Easter Island	Easter Island, Chile	4-EASTER-2
7062	1	Otay Mountain	Otay Mountain, San Diego, CA	4-OTAY-2
7063	39	Greenbelt	GORF, GSFC, Greenbelt, MD	4-GSFC-2
7064	39	Greenbelt	GORF, GSFC, Greenbelt, MD	4-GSFC-3
7065	39	Greenbelt	GORF, GSFC, Greenbelt, MD	4-GSFC-4
7080	33B	McDonald	McDonald Observatory, Fort Davis, TX	4-MCDNLD-2
7082	22	Bear Lake	Bear Lake, UT	4-BEAR L-2
7083	39	Greenbelt	GORF, GSFC, Greenbelt, MD	4-GSFC-5
7084	11	Owens Valley	Owens Valley Radio Obs., Big Pine, CA	4-OVRO-2
7085	8C	Goldstone Mars	Goldstone, CA	4-GOLD M-3
7086	33B	McDonald	McDonald Observatory, Fort Davis, TX	4-MCDNLD-3
7089	115	Madrid	Madrid, Spain	4-MADRID-3
7090	133	Yaragadee	Yaragadee, Australia	4-YARGAD-2
7091	41	Westford	Haystack Observatory, Westford, MA	4-WSTFRD-2
7092	136	Kwajalein	Kwajalein, Marshall Islands	4-KWAJLN-3
7094	990	Kokee Park	Kokee Park, Kauai, HI	4-KOKEE-3
7097	96	Easter Island	Easter Island, Chile	4-EASTER-3
7100	39	Greenbelt	GORF, GSFC, Greenbelt, MD	4-GSFC-6
7101	39	Greenbelt	GORF, GSFC, Greenbelt, MD	4-GSFC-7
7102	39	Greenbelt	GORF, GSFC, Greenbelt, MD	4-GSFC-8
7103	39	Greenbelt	GORF, GSFC, Greenbelt, MD	4-GSFC-9
7104	39	Greenbelt	GORF, GSFC, Greenbelt, MD	4-GSFC-10
7105	39	Greenbelt	GORF, GSFC, Greenbelt, MD	4-GSFC-11
7106	39	Greenbelt	GORF, GSFC, Greenbelt, MD	4-GSFC-12
7109	14	Quincy	Quincy, CA	4-QUINCY-3
7110	701	Monument Peak	Mount Laguna, CA	4-MON PK-2
7111	9	Vandenberg	Vandenberg Air Force Base, CA	4-VANBRG-2
7112	24	Platteville	Platteville, CO	4-PLATVL-2
7113	2	La Jolla	La Jolla, CA	4-LA JOL-2
7114	11	Owens Valley	Owens Valley Radio Obs., Big Pine, CA	4-OVRO-3
7115	8A	Goldstone Venus	Goldstone, CA	4-GOLD V-3
7120	90	Haleakala	Lure Obs., Mount Haleakala, Maui, HI	4-HALEAK-2

Table 3-3 (Continued)

Crustal Dynamics Project Sites Listed by Monument Number

Mon. Number	Site Number	Site Name	Site Location	Page
7121	92	Huahine	Huahine, Society Is, French Polynesia	4-HUAHNE-2
7122	71	Mazatlan	Mazatlan, Sinaloa, Mexico	4-MZTLN-2
7123	92	Huahine	Huahine, Society Is, French Polynesia	4-HUAHNE-2
7125	39	Greenbelt	GORF, GSFC, Greenbelt, MD	4-GSFC-13
7130	39	Greenbelt	GORF, GSFC, Greenbelt, MD	4-GSFC-14
7203	143	Effelsberg	Bonn, West Germany	4-EFLBRG-2
7204	38	Green Bank	NRAO, Green Bank, WV	4-GRNBK-2
7205	41	Westford	Haystack Observatory, Westford, MA	4-WSTFRD-3
7206	33B	McDonald	McDonald Observatory, Fort Davis, TX	4-MCDNLD-4
7207	11	Owens Valley	Owens Valley Radio Obs., Big Pine, CA	4-OVRO-4
7209	41	Westford	Haystack Observatory, Westford, MA	4-WSTFRD-4
7210	90	Haleakala	Lure Obs., Mount Haleakala, Maui, HI	4-HALEAK-3
7212	120	Onsala	Onsala, Sweden	4-ONSALA-2
7213	120	Onsala	Onsala, Sweden	4-ONSALA-3
7215	116	Chilbolton	Chilbolton, United Kingdom	4-CHLBLT-2
7216	33A	Fort Davis	Fort Davis, TX	4-FT DAV-2
7217	40	Maryland Point	Maryland Point, MD	4-MD PT-2
7218	714	Hat Creek	Hat Creek Radio Astro. Obs., Cassel, CA	4-HAT CR-2
7219	43	Richmond	Perrine, FL	4-RCHMND-2
7220	701	Monument Peak	Mount Laguna, CA	4-MON PK-3
7221	14	Quincy	Quincy, CA	4-QUINCY-4
7222	8B	Mojave	Barstow, CA	4-MOJAVE-2
7223	9	Vandenberg	Vandenberg Air Force Base, CA	4-VANBRG-3
7224	119	Wettzell	Wettzell, West Germany	4-WETZEL-2
7225	61	Fairbanks	Fairbanks, AK	4-FRBNKS-3
7226	660	Shanghai	Shanghai Obs., Peoples Republic Of China	4-SHNGHI-2
7227	660	Shanghai	Shanghai Obs., Peoples Republic Of China	4-SHNGHI-3
7235	850	Matera	Matera, Italy	4-MATERA-2
7240	102	Sao Paulo	Sao Paulo, Brazil	4-SAO PL-2
7251	212	Point Reyes	Point Reyes, CA	4-PT REY-2
7252	13	Presidio	San Francisco, CA	4-PRSDIO-2
7253	7	Pearblossom	Pearblossom, CA	4-PRBLSM-2
7254	7	Pearblossom	Pearblossom, CA	4-PRBLSM-3
7255	405	Santa Paula	Santa Paula, CA	4-S PAUL-2
7256	204	Pinyon Flat	Pinyon Flat, CA	4-PINYON-2
7257	26	Ely	Ely, NV	4-ELY-2
7258	24	Platteville	Platteville, CO	4-PLATVL-3
7259	720	Mammoth Lakes	Mammoth Lakes, CA	4-MAMOTH-2
7260	14	Quincy	Quincy, CA	4-QUINCY-5
7261	27	Flagstaff	Flagstaff, AZ	4-FLGSTF-2
7262	2	La Jolla	La Jolla, CA	4-LA JOL-3
7263	6	Pasadena	Jet Propulsion Lab, Pasadena, CA	4-JPL-2

Table 3-3 (Continued)

Crustal Dynamics Project Sites Listed by Monument Number

Mon. Number	Site Number	Site Name	Site Location	Page
7264	6	Pasadena	Jet Propulsion Lab, Pasadena, CA	4-JPL-3
7265	8B	Mojave	Barstow, CA	4-MOJAVE-3
7266	12	Fort Ord	Fort Ord, CA	4-FT ORD-2
7267	205	Deadman Lake	Deadman Lake, CA	4-DEADMN-2
7268	4	Palos Verdes	Palos Verdes, CA	4-P VRDS-2
7269	206	Black Butte	Black Butte Mountain, CA	4-BL BUT-2
7270	201	Ocotillo	Ocotillo, CA	4-OCTILO-2
7272	6	Pasadena	Jet Propulsion Lab, Pasadena, CA	4-JPL-4
7273	202	Yuma	Yuma Proving Grounds, AZ	4-YUMA-2
7274	701	Monument Peak	Mount Laguna, CA	4-MON PK-4
7275	8A	Goldstone Venus	Goldstone, CA	4-GOLD V-4
7276	1	Otay Mountain	Otay Mountain, San Diego, CA	4-OTAY-3
7277	805	Cape Yakataga	Cape Yakataga, AK	4-CYAKTG-2
7278	803	Kodiak	Kodiak, AK	4-KODIAK-2
7279	801	Nome	Nome, AK	4-NOME-2
7280	802	Sand Point	Sand Point, AK	4-SND PT-2
7281	804	Sourdough	Sourdough, AK	4-SRDOGH-2
7282	67	Algonquin	Algonquin, Ontario, Canada	4-ALGNQN-2
7283	69	Penticton	Penticton, British Columbia, Canada	4-PNTCN-2
7284	806	Whitehorse	Whitehorse, Yukon Territory, Canada	4-WHRSE-2
7285	408	Yellowknife	Yellowknife, Northwest Territory, Canada	4-YLWKNF-2
7286	26	Ely	Ely, NV	4-ELY-3
7287	8B	Mojave	Barstow, CA	4-MOJAVE-4
7290	413	Vernal	Vernal, UT	4-VERNAL-2
7400	99	Santiago	Santiago, Chile	4-SNTAGO-2
7401	892	Cerro Tololo	Cerro Tololo, Chile	4-C TOLO-2
7402	891	Iquique	Iquique, Chile	4-IQUIQE-2
7510	674	Askites	Askites, Greece	4-ASKITS-2
7512	677	Katavia	Katavia, Rhodes, Greece	4-KATVIA-2
7515	855	Dionysos	National Technical Univ., Athens, Greece	4-DIONYS-2
7517	672	Roumeli	Roumeli, Crete, Greece	4-ROUMLI-2
7520	675	Karitsa	Karitsa, Greece	4-KRITSA-2
7525	676	Xrisokalaria	Xrisokalaria, Greece	4-XRISOK-2
7530	857	Bar Giyyora	Bar Giyyora, Israel	4-BGYORA-2
7540	850	Matera	Matera, Italy	4-MATERA-3
7541	850	Matera	Matera, Italy	4-MATERA-4
7544	848	Lampedusa	Lampedusa, Italy	4-LMPDSA-2
7545	853	Punta Sa Menta	Punta Sa Menta, Cagliari, Italy	4-PUNTA-2
7550	854	Basovizza	Basovizza, Trieste, Italy	4-BASOVZ-2
7570	688	Demirkoy	Demirkoy, Turkey	4-DEMRKY-2
7575	680	Diyarbakir	Diyarbakir, Turkey	4-DYRBKR-2
7580	684	Melengiclik	Melengiclik, Turkey	4-MELEN-2

Table 3-3 (Continued)

Crustal Dynamics Project Sites Listed by Monument Number

Mon. Number	Site Number	Site Name	Site Location	Page
7585	682	Yozgat	Yozgat, Turkey	4-YOZGAT-2
7587	683	Yigilca	Yigilca, Turkey	4-YIGLCA-2
7590	883	Monte Generoso	Monte Generoso, Switzerland	4-MGNRSO-2
7595	119	Wettzell	Wettzell, West Germany	4-WETZEL-3
7596	119	Wettzell	Wettzell, West Germany	4-WETZEL-4
7597	119	Wettzell	Wettzell, West Germany	4-WETZEL-5
7598	119	Wettzell	Wettzell, West Germany	4-WETZEL-6
7599	119	Wettzell	Wettzell, West Germany	4-WETZEL-7
7801	650	Helwan	Helwan, Egypt	4-HELVAN-2
7805	860	Metsahovi	Kirkkonummi, Finland	4-MTSHOV-2
7807	39	Greenbelt	GORF, GSFC, Greenbelt, MD	4-GSFC-15
7810	882	Zimmerwald	Bern, Switzerland	4-ZIMMER-2
7824	640	San Fernando	San Fernando, Spain	4-SN FER-2
7831	650	Helwan	Helwan, Egypt	4-HELVAN-3
7833	118	Kootwijk	Kootwijk Obs., Apeldoorn, Netherlands	4-KOTWJK-2
7834	119	Wettzell	Wettzell, West Germany	4-WETZEL-8
7835	142	Grasse	Grasse, France	4-GRASSE-2
7837	660	Shanghai	Shanghai Obs., Peoples Republic Of China	4-SHNGHI-4
7838	870	Simosato	Simosato Hydrographic Observatory, Japan	4-SMSATO-2
7839	610	Graz	Graz, Austria	4-GRAZ-2
7840	880	Herstmonceux	Royal Greenwich Obs., Great Britain	4-HRSTMN-2
7842	142	Grasse	Grasse, France	4-GRASSE-3
7843	134	Orroral	Orroral Valley, Australia	4-ORORAL-2
7845	142	Grasse	Grasse, France	4-GRASSE-3
7850	33B	McDonald	McDonald Observatory, Fort Davis, TX	4-MCDNLD-2
7851	33B	McDonald	McDonald Observatory, Fort Davis, TX	4-MCDNLD-4
7853	11	Owens Valley	Owens Valley Radio Obs., Big Pine, CA	4-OVRO-5
7880	9	Vandenberg	Vandenberg Air Force Base, CA	4-VANBRG-4
7881	821	Socorro Island	Socorro, Revillagigedo Islands, Mexico	4-SOCORO-2
7882	70	Cabo San Lucas	Cabo San Lucas, Baja, Mexico	4-CABO-2
7883	219	Ensenada	Ensenada, Baja, Mexico	4-ENSNDA-2
7885	33B	McDonald	McDonald Observatory, Fort Davis, TX	4-MCDNLD-7
7886	14	Quincy	Quincy, CA	4-QUINCY-6
7887	9	Vandenberg	Vandenberg Air Force Base, CA	4-VANBRG-5
7889	39	Greenbelt	GORF, GSFC, Greenbelt, MD	4-GSFC-16
7891	27	Flagstaff	Flagstaff, AZ	4-FLGSTF-3
7892	413	Vernal	Vernal, UT	4-VERNAL-3
7894	202	Yuma	Yuma Proving Grounds, AZ	4-YUMA-3
7896	6	Pasadena	Jet Propulsion Lab, Pasadena, CA	4-JPL-5
7897	33B	McDonald	McDonald Observatory, Fort Davis, TX	4-MCDNLD-8
7899	39	Greenbelt	GORF, GSFC, Greenbelt, MD	4-GSFC-17
7907	98	Arequipa	Arequipa, Peru	4-AREQIP-2

Table 3-3 (Continued)

Crustal Dynamics Project Sites Listed by Monument Number

Mon. Number	Site Number	Site Name	Site Location	Page
7917	39	Greenbelt	GORF, GSFC, Greenbelt, MD	4-GSFC-18
7918	39	Greenbelt	GORF, GSFC, Greenbelt, MD	4-GSFC-19
7919	39	Greenbelt	GORF, GSFC, Greenbelt, MD	4-GSFC-20
7920	39	Greenbelt	GORF, GSFC, Greenbelt, MD	4-GSFC-21
7939	850	Matera	Matera, Italy	4-MATERA-5
7940	855	Dionysos	National Technical Univ., Athens, Greece	4-DIONYS-3
7943	134	Orroral	Orroral Valley, Australia	4-ORORAL-3
7999	33B	McDonald	McDonald Observatory, Fort Davis, TX	4-MCDNLD-9
8833	118	Kootwijk	Kootwijk Obs., Apeldoorn, Netherlands	4-KOTWJK-3

Table 3-4

Crustal Dynamics Project Sites Listed by Geographic Region

Geographic Region	Site Name	Site Location	Site Number	Page
Alaska	Cape Yakataga	Cape Yakataga, AK	805	4-CYAKTG-1
Alaska	Fairbanks	Fairbanks, AK	61	4-FRBNKS-1
Alaska	Kodiak	Kodiak, AK	803	4-KODIAK-1
Alaska	Nome	Nome, AK	801	4-NOME-1
Alaska	Sand Point	Sand Point, AK	802	4-SND PT-1
Alaska	Sourdough	Sourdough, AK	804	4-SRDOGH-1
Asia	Shanghai	Shanghai Obs., Peoples Republic Of China	660	4-SHNGHI-1
Australia	Orroral	Orroral Valley, Australia	134	4-ORORAL-1
Australia	Tidbinbilla	Tidbinbilla, Australia	131	4-TBILLA-1
Australia	Yaragadee	Yaragadee, Australia	133	4-YARGAD-1
California	Black Butte	Black Butte Mountain, CA	206	4-BL BUT-1
California	Deadman Lake	Deadman Lake, CA	205	4-DEADMN-1
California	Fort Ord	Fort Ord, CA	12	4-FT ORD-1
California	Goldstone Mars	Goldstone, CA	8C	4-GOLD M-1
California	Goldstone Venus	Goldstone, CA	8A	4-GOLD V-1
California	Hat Creek	Hat Creek Radio Astro. Obs., Cassel, CA	714	4-HAT CR-1
California	La Jolla	La Jolla, CA	2	4-LA JOL-1
California	Mammoth Lakes	Mammoth Lakes, CA	720	4-MAMOTH-1
California	Mojave	Barstow, CA	8B	4-MOJAVE-1
California	Monument Peak	Mount Laguna, CA	701	4-MON PK-1
California	Ocotillo	Ocotillo, CA	201	4-OCTILO-1
California	Otay Mountain	Otay Mountain, San Diego, CA	1	4-OTAY-1
California	Owens Valley	Owens Valley Radio Obs., Big Pine, CA	11	4-OVRO-1
California	Palos Verdes	Palos Verdes, CA	4	4-P VRDS-1
California	Pasadena	Jet Propulsion Lab, Pasadena, CA	6	4-JPL-1
California	Pearblossom	Pearblossom, CA	7	4-PRBLSM-1
California	Pinyon Flat	Pinyon Flat, CA	204	4-PINYON-1
California	Point Reyes	Point Reyes, CA	212	4-PT REY-1
California	Presidio	San Francisco, CA	13	4-PRSDIO-1
California	Quincy	Quincy, CA	14	4-QUINCY-1
California	Santa Paula	Santa Paula, CA	405	4-S PAUL-1
California	Vandenberg	Vandenberg Air Force Base, CA	9	4-VANBRG-1
Europe	Chilbolton	Chilbolton, United Kingdom	116	4-CHLBLT-1
Europe	Effelsberg	Bonn, West Germany	143	4-EFLBRG-1
Europe	Grasse	Grasse, France	142	4-GRASSE-1
Europe	Graz	Graz, Austria	610	4-GRAZ-1
Europe	Herstmonceux	Royal Greenwich Obs., Great Britain	880	4-HRSTMN-1
Europe	Kootwijk	Kootwijk Obs., Apeldoorn, Netherlands	118	4-KOTWJK-1
Europe	Madrid	Madrid, Spain	115	4-MADRID-1
Europe	Metsahovi	Kirkkonummi, Finland	860	4-MTSHOV-1
Europe	Monte Generoso	Monte Generoso, Switzerland	883	4-MGNRSO-1
Europe	Onsala	Onsala, Sweden	120	4-ONSALA-1

Table 3-4 (Continued)

Crustal Dynamics Project Sites Listed by Geographic Region

Geographic Region	Site Name	Site Location	Site Number	Page
Europe	Wettzell	Wettzell, West Germany	119	4-WETZEL-1
Europe	Zimmerwald	Bern, Switzerland	882	4-ZIMMER-1
Mediterranean	Askites	Askites, Greece	674	4-ASKITS-1
Mediterranean	Bar Giyyora	Bar Giyyora, Israel	857	4-BGYORA-1
Mediterranean	Basovizza	Basovizza, Trieste, Italy	854	4-BASOVZ-1
Mediterranean	Demirkoy	Demirkoy, Turkey	688	4-DEMRY-1
Mediterranean	Dionysos	National Technical Univ., Athens, Greece	855	4-DIONYS-1
Mediterranean	Diyarbakir	Diyarbakir, Turkey	680	4-DYRBKR-1
Mediterranean	Helwan	Helwan, Egypt	650	4-HELWAN-1
Mediterranean	Karitsa	Karitsa, Greece	675	4-KRITSA-1
Mediterranean	Katavia	Katavia, Rhodes, Greece	677	4-KATVIA-1
Mediterranean	Lampedusa	Lampedusa, Italy	848	4-LMPDSA-1
Mediterranean	Matera	Matera, Italy	850	4-MATERA-1
Mediterranean	Melengiclik	Melengiclik, Turkey	684	4-MELEN-1
Mediterranean	Punta Sa Menta	Punta Sa Menta, Cagliari, Italy	853	4-PUNTA-1
Mediterranean	Roumelli	Roumelli, Crete, Greece	672	4-ROUMLI-1
Mediterranean	San Fernando	San Fernando, Spain	640	4-SN FER-1
Mediterranean	Xrisokalaria	Xrisokalaria, Greece	676	4-XRISOK-1
Mediterranean	Yigilca	Yigilca, Turkey	683	4-YIGLCA-1
Mediterranean	Yozgat	Yozgat, Turkey	682	4-YOZGAT-1
North America	Algonquin	Algonquin, Ontario, Canada	67	4-ALGNQN-1
North America	Bear Lake	Bear Lake, UT	22	4-BEAR L-1
North America	Cabo San Lucas	Cabo San Lucas, Baja, Mexico	70	4-CABO-1
North America	Ely	Ely, NV	26	4-ELY-1
North America	Ensenada	Ensenada, Baja, Mexico	219	4-ENSND-1
North America	Flagstaff	Flagstaff, AZ	27	4-FLGSTF-1
North America	Fort Davis	Fort Davis, TX	33A	4-FT DAV-1
North America	Green Bank	NRAO, Green Bank, WV	38	4-GRNBK-1
North America	Greenbelt	GORF, GSFC, Greenbelt, MD	39	4-GSFC-1
North America	Maryland Point	Maryland Point, MD	40	4-MD PT-1
North America	Mazatlan	Mazatlan, Sinaloa, Mexico	71	4-MZTLN-1
North America	McDonald	McDonald Observatory, Fort Davis, TX	33B	4-MCDNLD-1
North America	Penticton	Penticton, British Columbia, Canada	69	4-PNTCN-1
North America	Platteville	Platteville, CO	24	4-PLATVL-1
North America	Richmond	Perrine, FL	43	4-RCHMND-1
North America	Socorro Island	Socorro, Revillagigedo Islands, Mexico	821	4-SOCORO-1
North America	Vernal	Vernal, UT	413	4-VERNAL-1
North America	Westford	Haystack Observatory, Westford, MA	41	4-WSTFRD-1
North America	Whitehorse	Whitehorse, Yukon Territory, Canada	806	4-WHRSE-1
North America	Yellowknife	Yellowknife, Northwest Territory, Canada	408	4-YLWKNF-1
North America	Yuma	Yuma Proving Grounds, AZ	202	4-YUMA-1
Pacific	Easter Island	Easter Island, Chile	96	4-EASTER-1

Table 3-4 (Continued)

Crustal Dynamics Project Sites Listed by Geographic Region

Geographic Region	Site Name	Site Location	Site Number	Page
Pacific	Haleakala	Lure Obs., Mount Haleakala, Maui, HI	90	4-HALEAK-1
Pacific	Huahine	Huahine, Society Is, French Polynesia	92	4-HUAHNE-1
Pacific	Kashima	Kashima, Japan	138	4-KSHIMA-1
Pacific	Kokee Park	Kokee Park, Kauai, HI	990	4-KOKEE-1
Pacific	Kwajalein	Kwajalein, Marshall Islands	136	4-KWAJLN-1
Pacific	Simosato	Simosato Hydrographic Observatory, Japan	870	4-SMSATO-1
South America	Arequipa	Arequipa, Peru	98	4-AREQIP-1
South America	Cerro Tololo	Cerro Tololo, Chile	892	4-C TOLO-1
South America	Iquique	Iquique, Chile	891	4-IQUIQE-1
South America	Santiago	Santiago, Chile	99	4-SNTAGO-1
South America	Sao Paulo	Sao Paulo, Brazil	102	4-SAO PL-1

Table 3-5

Crustal Dynamics Project Sites Listed by Tectonic Plate

Tectonic Plate	Site Name	Site Location	Site Number	Page
African	Bar Giyyora	Bar Giyyora, Israel	857	4-BGYORA-1
African	Helwan	Helwan, Egypt	650	4-HELVAN-1
African	Lampedusa	Lampedusa, Italy	848	4-LMPDSA-1
Arabian	Diyarbakir	Diyarbakir, Turkey	680	4-DYRBKR-1
Australian-Indian	Orroral	Orroral Valley, Australia	134	4-ORORAL-1
Australian-Indian	Tidbinbilla	Tidbinbilla, Australia	131	4-TBILLA-1
Australian-Indian	Yaragadee	Yaragadee, Australia	133	4-YARGAD-1
Eurasian	Askites	Askites, Greece	674	4-ASKITS-1
Eurasian	Basovizza	Basovizza, Trieste, Italy	854	4-BASOVZ-1
Eurasian	Chilbolton	Chilbolton, United Kingdom	116	4-CHLBLT-1
Eurasian	Demirkoy	Demirkoy, Turkey	688	4-DEMRY-1
Eurasian	Dionysos	National Technical Univ., Athens, Greece	855	4-DIONYS-1
Eurasian	Effelsberg	Bonn, West Germany	143	4-EFLBRG-1
Eurasian	Grasse	Grasse, France	142	4-GRASSE-1
Eurasian	Graz	Graz, Austria	610	4-GRAZ-1
Eurasian	Herstmonceux	Royal Greenwich Obs., Great Britain	880	4-HRSTMN-1
Eurasian	Karitsa	Karitsa, Greece	675	4-KRITSA-1
Eurasian	Kashima	Kashima, Japan	138	4-KSHIMA-1
Eurasian	Katavia	Katavia, Rhodes, Greece	677	4-KATVIA-1
Eurasian	Kootwijk	Kootwijk Obs., Apeldoorn, Netherlands	118	4-KOTWJK-1
Eurasian	Madrid	Madrid, Spain	115	4-MADRID-1
Eurasian	Matera	Matera, Italy	850	4-MATERA-1
Eurasian	Melengiclik	Melengiclik, Turkey	684	4-MELEN-1
Eurasian	Metsahovi	Kirkkonummi, Finland	860	4-MTSNOV-1
Eurasian	Monte Generoso	Monte Generoso, Switzerland	883	4-MGNRSO-1
Eurasian	Onsala	Onsala, Sweden	120	4-ONSALA-1
Eurasian	Punta Sa Menta	Punta Sa Menta, Cagliari, Italy	853	4-PUNTA-1
Eurasian	Roumelli	Roumelli, Crete, Greece	672	4-ROUMLI-1
Eurasian	San Fernando	San Fernando, Spain	640	4-SN FER-1
Eurasian	Shanghai	Shanghai Obs., Peoples Republic Of China	660	4-SHNGHI-1
Eurasian	Simosato	Simosato Hydrographic Observatory, Japan	870	4-SMSATO-1
Eurasian	Wettzell	Wettzell, West Germany	119	4-WETZEL-1
Eurasian	Xrisokalaria	Xrisokalaria, Greece	676	4-XRISOK-1
Eurasian	Yigilca	Yigilca, Turkey	683	4-YIGLCA-1
Eurasian	Yozgat	Yozgat, Turkey	682	4-YOZGAT-1
Eurasian	Zimmerwald	Bern, Switzerland	882	4-ZIMMER-1
Nazca	Easter Island	Easter Island, Chile	96	4-EASTER-1
North American	Algonquin	Algonquin, Ontario, Canada	67	4-ALGNQN-1
North American	Bear Lake	Bear Lake, UT	22	4-BEAR L-1
North American	Black Butte	Black Butte Mountain, CA	206	4-BL BUT-1
North American	Cape Yakataga	Cape Yakataga, AK	805	4-CYAKTG-1
North American	Deadman Lake	Deadman Lake, CA	205	4-DEADMN-1

Table 3-5 (Continued)

Crustal Dynamics Project Sites Listed by Tectonic Plate

Tectonic Plate	Site Name	Site Location	Site Number	Page
North American	Ely	Ely, NV	26	4-ELY-1
North American	Fairbanks	Fairbanks, AK	61	4-FRBNKS-1
North American	Flagstaff	Flagstaff, AZ	27	4-FLGSTF-1
North American	Fort Davis	Fort Davis, TX	33A	4-FT DAV-1
North American	Goldstone Mars	Goldstone, CA	8C	4-GOLD M-1
North American	Goldstone Venus	Goldstone, CA	8A	4-GOLD V-1
North American	Green Bank	NRAO, Green Bank, WV	38	4-GRNBK-1
North American	Greenbelt	GORF, GSFC, Greenbelt, MD	39	4-GSFC-1
North American	Hat Creek	Hat Creek Radio Astro. Obs., Cassel, CA	714	4-HAT CR-1
North American	Kodiak	Kodiak, AK	803	4-KODIAK-1
North American	Mammoth Lakes	Mammoth Lakes, CA	720	4-MAMOTH-1
North American	Maryland Point	Maryland Point, MD	40	4-MD PT-1
North American	Mazatlan	Mazatlan, Sinaloa, Mexico	71	4-MZTLN-1
North American	McDonald	McDonald Observatory, Fort Davis, TX	33B	4-MCDNLD-1
North American	Mojave	Barstow, CA	8B	4-MOJAVE-1
North American	Nome	Nome, AK	801	4-NOME-1
North American	Owens Valley	Owens Valley Radio Obs., Big Pine, CA	11	4-OVRO-1
North American	Pearblossom	Pearblossom, CA	7	4-PRBLSM-1
North American	Penticton	Penticton, British Columbia, Canada	69	4-PNTCN-1
North American	Platteville	Platteville, CO	24	4-PLATVL-1
North American	Point Reyes	Point Reyes, CA	212	4-PT REY-1
North American	Presidio	San Francisco, CA	13	4-PRSDIO-1
North American	Quincy	Quincy, CA	14	4-QUINCY-1
North American	Richmond	Perrine, FL	43	4-RCHMND-1
North American	Sand Point	Sand Point, AK	802	4-SND PT-1
North American	Sourdough	Sourdough, AK	804	4-SRDOGH-1
North American	Vernal	Vernal, UT	413	4-VERNAL-1
North American	Westford	Haystack Observatory, Westford, MA	41	4-WSTFRD-1
North American	Whitehorse	Whitehorse, Yukon Territory, Canada	806	4-WHRSE-1
North American	Yellowknife	Yellowknife, Northwest Territory, Canada	408	4-YLWKNF-1
North American	Yuma	Yuma Proving Grounds, AZ	202	4-YUMA-1
Pacific	Cabo San Lucas	Cabo San Lucas, Baja, Mexico	70	4-CABO-1
Pacific	Ensenada	Ensenada, Baja, Mexico	219	4-ENSNDA-1
Pacific	Fort Ord	Fort Ord, CA	12	4-FT ORD-1
Pacific	Haleakala	Lure Obs., Mount Haleakala, Maui, HI	90	4-HALEAK-1
Pacific	Huahine	Huahine, Society Is, French Polynesia	92	4-HUAHNE-1
Pacific	Kokee Park	Kokee Park, Kauai, HI	990	4-KOKEE-1
Pacific	Kwajalein	Kwajalein, Marshall Islands	136	4-KWAJLN-1
Pacific	La Jolla	La Jolla, CA	2	4-LA JOL-1
Pacific	Monument Peak	Mount Laguna, CA	701	4-MON PK-1
Pacific	Ocotillo	Ocotillo, CA	201	4-OCTILO-1
Pacific	Otay Mountain	Otay Mountain, San Diego, CA	1	4-OTAY-1

Table 3-5 (Continued)

Crustal Dynamics Project Sites Listed by Tectonic Plate

Tectonic Plate	Site Name	Site Location	Site Number	Page
Pacific	Palos Verdes	Palos Verdes, CA	4	4-P VRDS-1
Pacific	Pasadena	Jet Propulsion Lab, Pasadena, CA	6	4-JPL-1
Pacific	Pinyon Flat	Pinyon Flat, CA	204	4-PINYON-1
Pacific	Santa Paula	Santa Paula, CA	405	4-S PAUL-1
Pacific	Socorro Island	Socorro, Revillagigedo Islands, Mexico	821	4-SOCORO-1
Pacific	Vandenberg	Vandenberg Air Force Base, CA	9	4-VANBRG-1
South American	Arequipa	Arequipa, Peru	98	4-AREQIP-1
South American	Cerro Tololo	Cerro Tololo, Chile	892	4-C TOLO-1
South American	Iquique	Iquique, Chile	891	4-IQUIQE-1
South American	Santiago	Santiago, Chile	99	4-SNTAGO-1
South American	Sao Paulo	Sao Paulo, Brazil	102	4-SAO PL-1

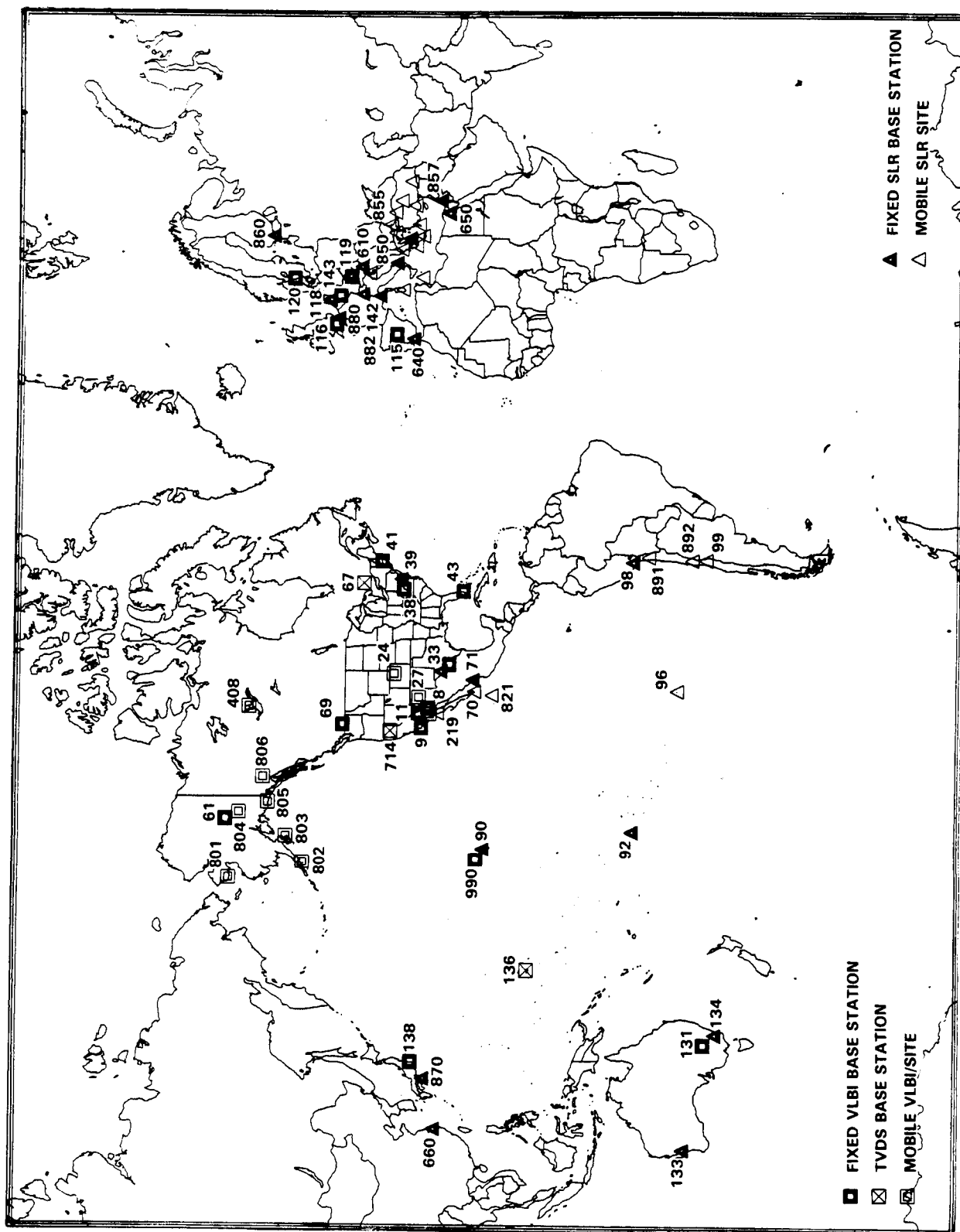


Figure 3-1. Global Map of Crustal Dynamics Project Sites

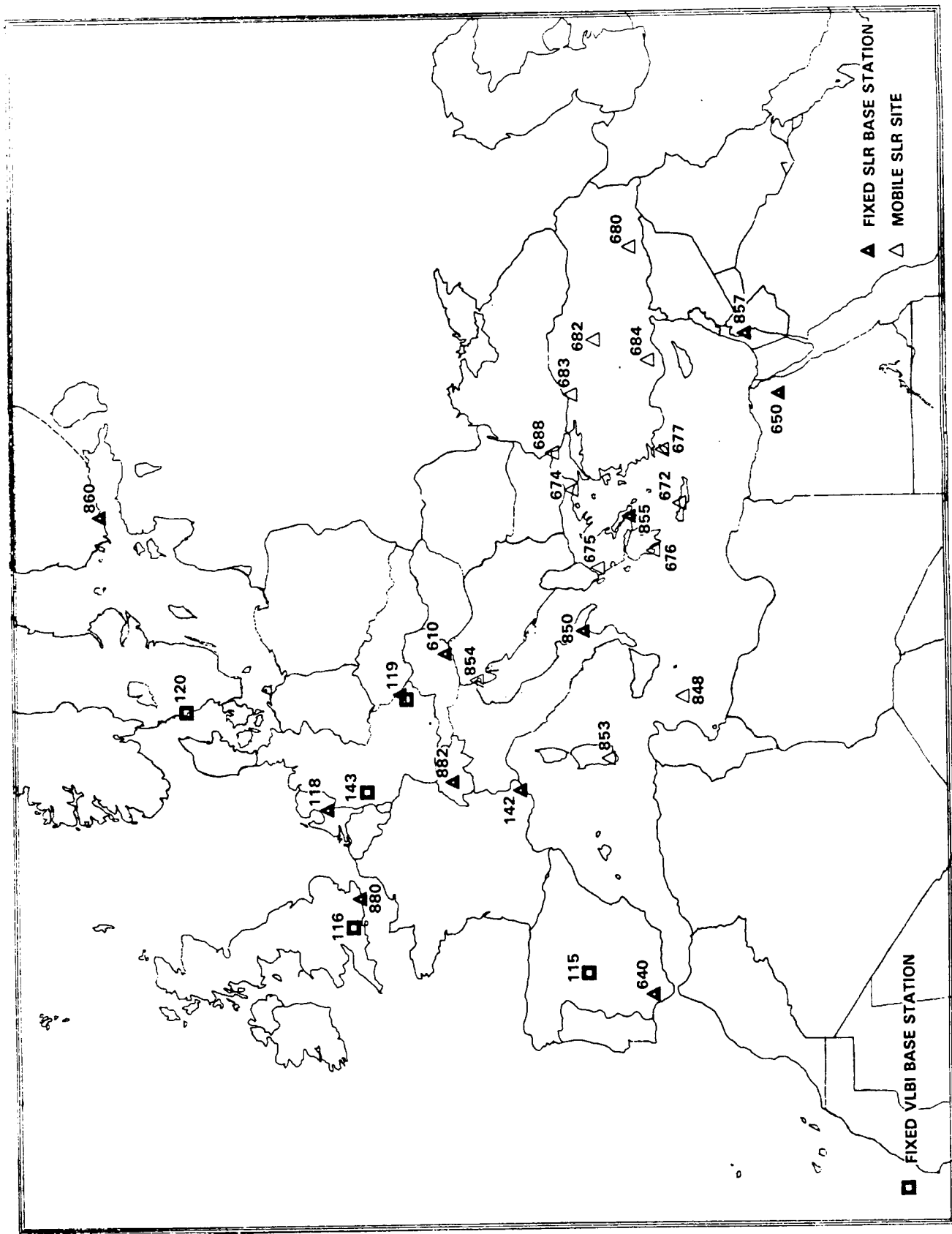


Figure 3-2. Europe and Mediterranean Map of Crustal Dynamics Project Sites

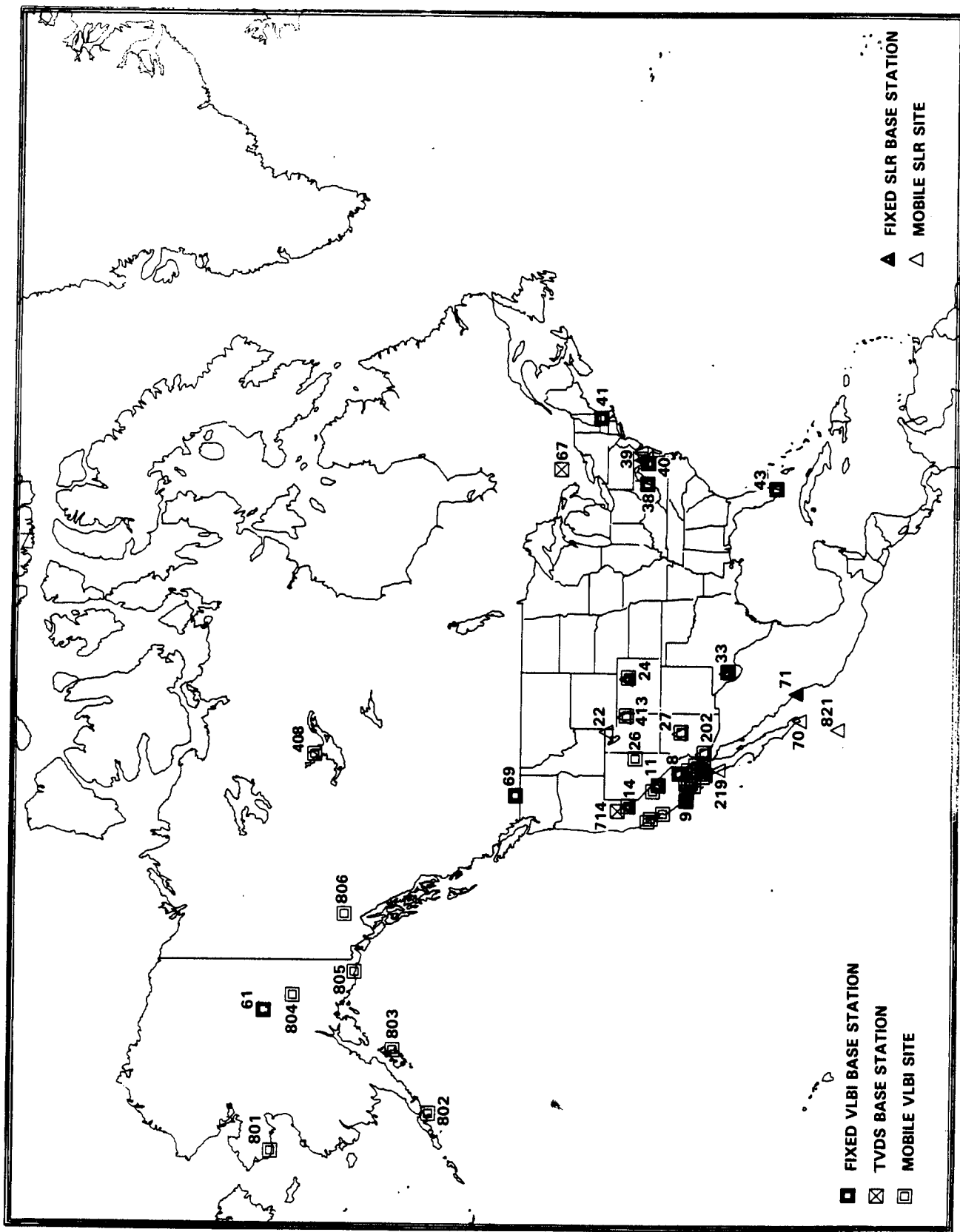


Figure 3-3. North America Map of Crustal Dynamics Project Sites

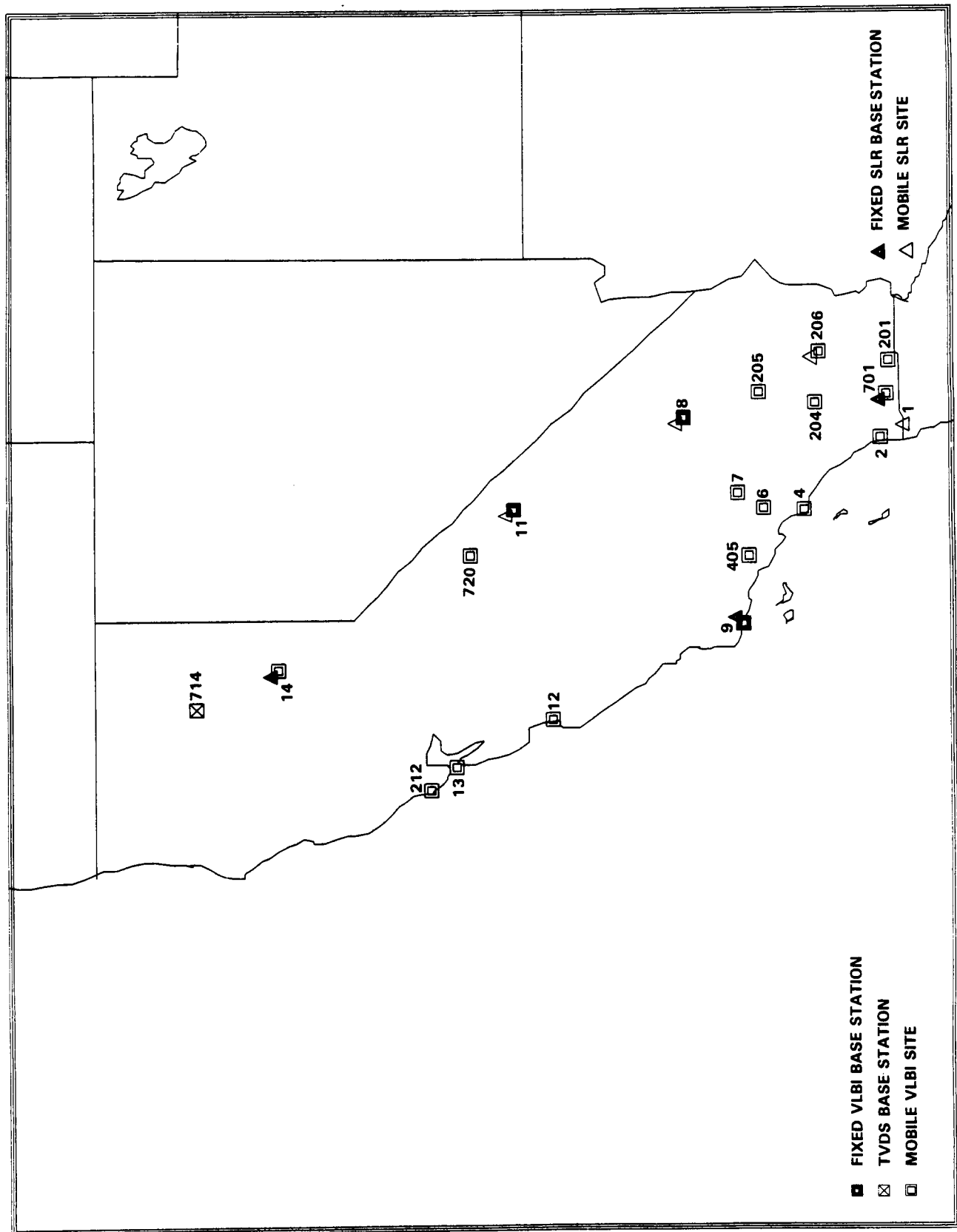


Figure 3-4. California Map of Crustal Dynamics Project Sites.

SECTION 4. SITE INFORMATION

-- SITE INFORMATION --

Site Number: 67

Current Site Name: ALGONQUIN

Other Site Name:

Location: ALGONQUIN, ONTARIO, CANADA

Geographic Region: NORTH AMERICA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF POLAR MOTION, EARTH ROTATION, AND INTERNAL PLATE DEFORMATION.

Site Description: THE SITE IS LOCATED AT THE ALGONQUIN RADIO OBSERVATORY AND IS OPERATED BY THE HERZBERG INSTITUTE OF ASTROPHYSICS, NATIONAL RESEARCH COUNCIL OF CANADA. A FIXED 46-METER ANTENNA IS USED FOR VLBI MEASUREMENTS AND FOR ASTROPHYSICAL STUDIES.

Site Topo Map: LAKE LAVIEILLE 31 E/16, EDITION 3, 1973, 1:50000 TOPOGRAPHIC MAP SERIES. AVAILABLE FROM CANADA MAP OFFICE, DEPARTMENT OF ENERGY, MINES AND RESOURCES, OTTAWA.

-- GEOLOGICAL INFORMATION --

Geological Province: PRECAMBRIAN GRENVILLE PROVINCE

Local Geology: THE SITE IS LOCATED IN THE CENTER OF THE ONTARIO GNEISS BELT, ON HORNBLende AND BIOTITE GNEISS OF THE APHEBIAN PROTEROZOIC.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 67
 Current Site Name: ALGONQUIN
 Location: ALGONQUIN, ONTARIO, CANADA
 Number of Observing Monuments: 1
 Surveyed into National Network? YES

Monument Number: 7282
 Type of Monument: INTERSECTION OF AZ/EL AXES
 Monument Inscription: NONE
 Systems Using Monument: 46-METER FIXED ANTENNA

Latitude: N 45 57' 19.69914''
 Longitude: W 78 4' 21.77852''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 223.410 meters
 Survey Source/Date Reported: GEODETIC SURVEY OF CANADA/01-JAN-84
 Datum/Ellipsoid: GEODETIC REFERENCE SYSTEM 1980/GEM 10B

Comments: A=6378137 M, B=6356752.3141 M IS GODDARD EARTH MODEL 10B.

Differential Coordinates FROM Observing Monument 7282 TO
 Reference Monuments and Other Observing Monuments

Data Source: GEODETIC SURVEY OF CANADA

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	683100D	182.745	65.121	-22.557
--	683100E	65.284	124.539	63.301
--	683100L	47.911	-41.345	-80.590

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --

-- SITE SKETCH --

Site Number: 67
Current Site Name: ALGONQUIN
Location: ALGONQUIN, ONTARIO, CANADA

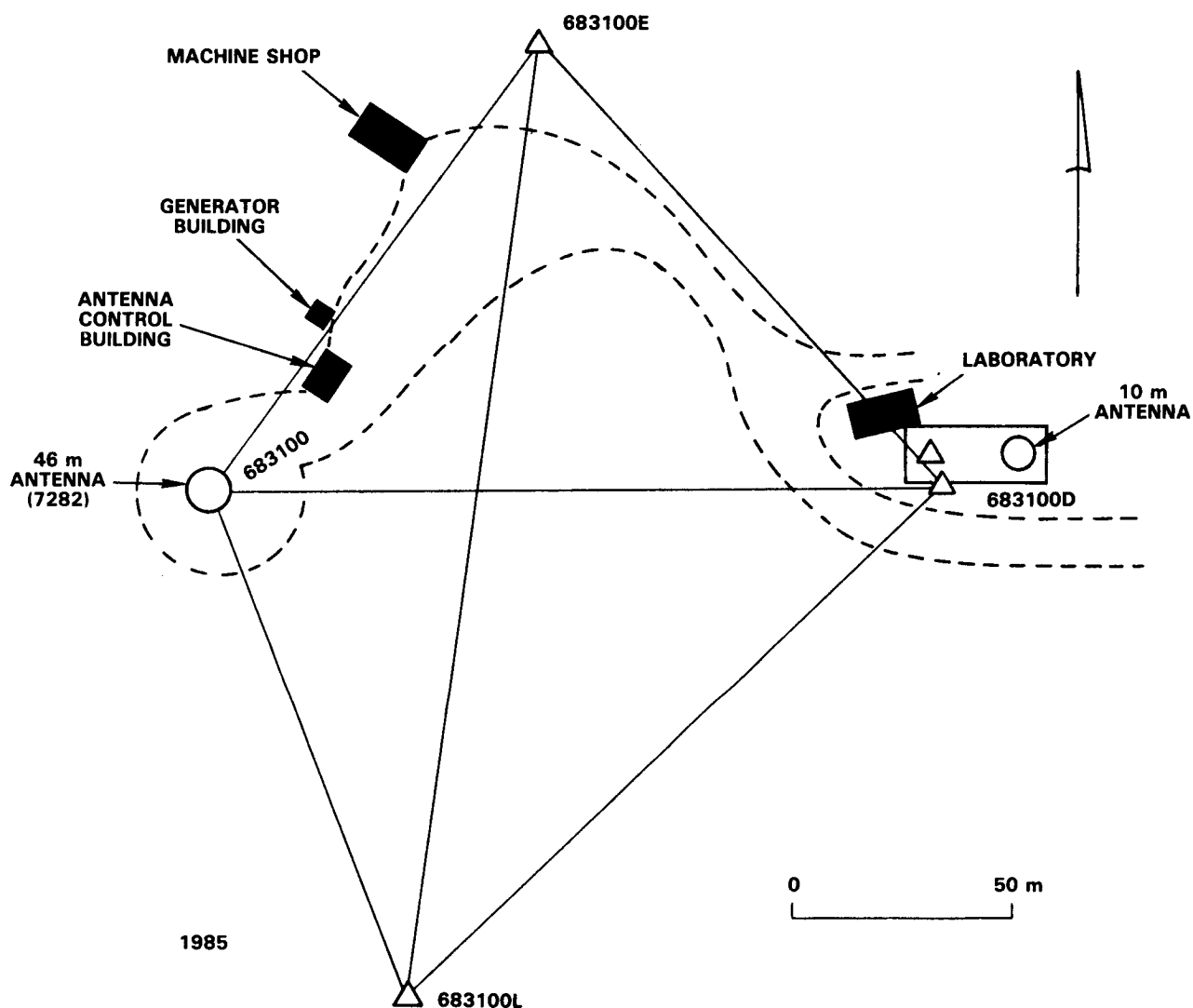


Figure 4-ALGNQN. ALGONQUIN Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 67
 Current Site Name: ALGONQUIN
 Location: ALGONQUIN, ONTARIO, CANADA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7282	150-FOOT	72828201	24-AUG-84	24-AUG-84	YES
7282	150-FOOT	72828201	28-AUG-84	28-AUG-84	YES
7282	150-FOOT	72828201	24-AUG-85	24-AUG-85	YES
7282	150-FOOT	72828201	28-AUG-85	28-AUG-85	YES
7282	150-FOOT	72828201	04-SEP-85	04-SEP-85	YES

-- SITE INFORMATION --

Site Number: 98

Current Site Name: AREQUIPA

Other Site Name:

Location: AREQUIPA, PERU

Geographic Region: SOUTH AMERICA

Tectonic Plate: SOUTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF GLOBAL PLATE, MOTION POLAR MOTION/EARTH ROTATION, INTERNAL PLATE DEFORMATION, AND PLATE STABILITY.

Site Description: THE SITE IS LOCATED IN WESTERN SOUTH AMERICA IN SOUTHERN PERU AT THE SMITHSONIAN ASTRONOMICAL OBSERVATORY. THE UNIVERSITY OF AUGUSTA HAS BEEN OPERATING THE SAO-2 LASER SINCE 1965. A PAD COMPATIBLE FOR OCCUPATION BY A TLRS IS UNDER CONSTRUCTION ON THE SITE. AREQUIPA IS ONE OF THE FEW LASER STATIONS LOCATED IN THE SOUTHERN HEMISPHERE AND IS CRITICAL FOR MEASUREMENTS DETERMINING POLAR MOTION.

Site Topo Map: UNKNOWN

-- GEOLOGICAL INFORMATION --

Geological Province: EUGEOSYNCLINAL BELT OF MESOZOIC AGE

Local Geology: QUATERNARY ALLUVIUM OVERLYING GRANODIORITIC UPPER CRETACEOUS LOWER TERTIARY COASTAL BATHOLITH. THIS BATHOLITH CONTAINS FAULTED INLIERS OF PRECAMBRIAN GNEISS.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 98
Current Site Name: AREQUIPA
Location: AREQUIPA, PERU
Number of Observing Monuments: 1
Surveyed into National Network? YES

Monument Number: 7907
Type of Monument: ROTATION AXES OF LASER
Monument Inscription: NONE
Systems Using Monument: SAO-2 FIXED LASER

Latitude: S 16 27' 55.085''
Longitude: W 71 29' 33.186''
Elevation Above MSL (Geoid): 2452.274 meters
Height Above Ellipsoid: 2486.5 meters
Survey Source/Date Reported: INTER-AMERICAN GEODETIC SURVEY/27-MAY-86
Datum/Ellipsoid: S.A. 1969/UNKNOWN

Comments: THE SYSTEM IS ALSO REFERENCED AS ARELAS.

Differential Coordinates FROM Observing Monument 7907 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

ORIGINAL PAGE IS
OF POOR QUALITY

Site Number: 98
Current Site Name: AREQUIPA
Location: AREQUIPA, PERU

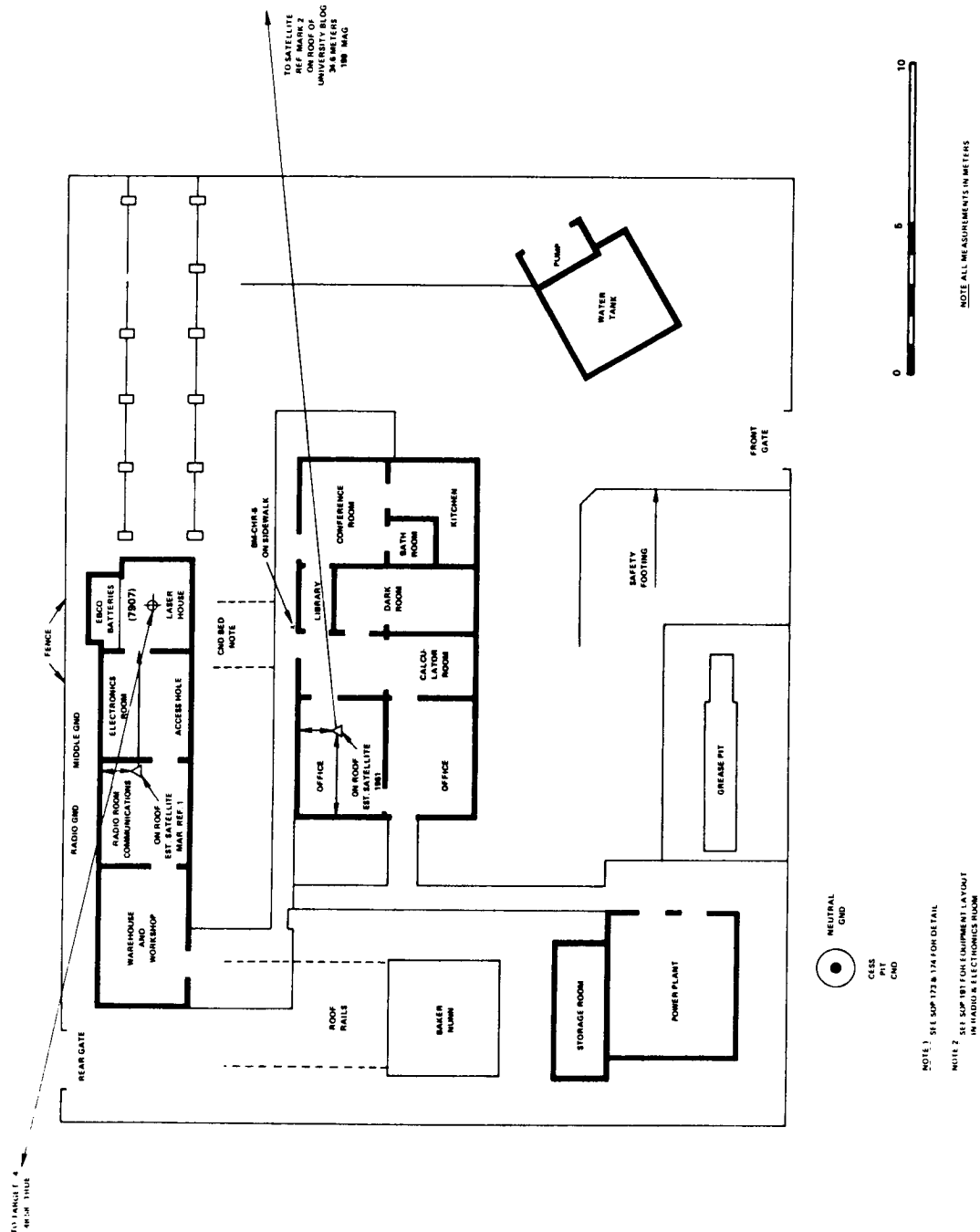


Figure 4-AREQIP. AREQUIPA Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 98
Current Site Name: AREQUIPA
Location: AREQUIPA, PERU

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7907	SAO-2	79074001	01-SEP-70	---	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-- No Previous Occupations --					

-- SITE INFORMATION --

Site Number: 674

Current Site Name: ASKITES
Other Site Name: ALEXANDROPOLIS
Location: ASKITES, GREECE
Geographic Region: MEDITERRANEAN
Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION AND THE KINEMATICS OF THE EAST AND CENTRAL MEDITERRANEAN.

Site Description: THIS WEGENER-MEDLAS SITE IS LOCATED APPROXIMATELY 25 KILOMETERS WEST-NORTHWEST OF ALEXANDROUPOLIS-GREECE JUST EAST OF THE VILLAGE OF ASKITES. THE LASER PAD IS LOCATED ADJACENT TO AN UNPAVED ROAD ON A SMALL KNOLL AND IS COMPATIBLE FOR OCCUPATION BY TRANSPORTABLE LASER SYSTEMS.

Site Topo Map: MARONIA 1:50,000; AVAILABLE FROM HELLENIC MILITARY GEOGRAPHIC SERVICE, P. ATROS, ATHENS. TEL: 0030-1-884-2811.

-- GEOLOGICAL INFORMATION --

Geological Province: NONE

Local Geology: MARBLES, PHYLLITES WITH ACIDIC INTRUSIONS OF GRANITES, GRANODIORITES, AND MONZONITES.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 674
Current Site Name: ASKITES
Location: ASKITES, GREECE
Number of Observing Monuments: 1
Surveyed into National Network? NO

Monument Number: 7510
Type of Monument: UNKNOWN
Monument Inscription: NONE
Systems Using Monument: MOBILE LASER RANGING SYSTEMS

Latitude: N 40.927928930
Longitude: E 25.565882014
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 177.991 meters
Survey Source/Date Reported: COORDINATES PROVIDED BY DR. DANNY VAN LOON/
01-AUG-87
Datum/Ellipsoid:

Comments: NONE

Differential Coordinates FROM Observing Monument 7510 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 674
Current Site Name: ASKITES
Location: ASKITES, GREECE

-- Site Sketch Not Available --

Figure 4-ASKITS. ASKITES Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 674
Current Site Name: ASKITES
Location: ASKITES, GREECE

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7510	MTLRS-1	75101501	21-MAY-86	21-JUL-86	YES
7510	MTLRS-2	75101602	25-MAY-87	28-AUG-87	NO

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
--------------------	---------------------	--------------------------	------------------	----------------	-----------------

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 857

Current Site Name: BAR GIYYORA
Other Site Name: JERUSALEM
Location: BAR GIYYORA, ISRAEL
Geographic Region: MEDITERRANEAN
Tectonic Plate: AFRICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF INTERNAL PLATE DEFORMATION AND PLATE STABILITY, AND MEASUREMENTS SUPPORTING MEDITERRANEAN TECTONICS AND SLR TECHNIQUE DEVELOPMENT.

Site Description: THIS SITE IS LOCATED IN ISRAEL ABOUT 25 MILES WEST OF JERUSALEM. NASA'S MOBLAS-2 LASER RANGING SYSTEM IS OPERATED AS A PERMANANT BASE STATION BY THE INSTITUTE FOR PETROLEUM RESEARCH AND GEOPHYSICS AT BAR GIYYORA. BECAUSE OF THE EXCELLENT WEATHER EXPECTED AT THIS SITE AND ITS GEOGRAPHIC LOCATION, IT IS EXPECTED TO MAKE A LARGE CONTRIBUTION TO THE EXPANDING WORLD-WIDE NETWORK OF LASER RANGING STATIONS.

Site Topo Map: UNKNOWN

-- GEOLOGICAL INFORMATION --

Geological Province: UNKNOWN

Local Geology: NOT AVAILABLE

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 857
Current Site Name: BAR GIYYORA
Location: BAR GIYYORA, ISRAEL
Number of Observing Monuments: 1
Surveyed into National Network? NO

Monument Number: 7530
Type of Monument: UNKNOWN
Monument Inscription: NONE (2/BG-STATION IDENTIFICATION)
Systems Using Monument: MOBLAS

Latitude: N 31 43' 19.355''
Longitude: E 35 05' 16.211''
Elevation Above MSL (Geoid): 751.72 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: BFEC/01-AUG-85
Datum/Ellipsoid: ISRAEL DATUM/CLARKE 1880

Comments: NONE

Differential Coordinates FROM Observing Monument 7530 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 857
Current Site Name: BAR GIYYORA
Location: BAR GIYYORA, ISRAEL

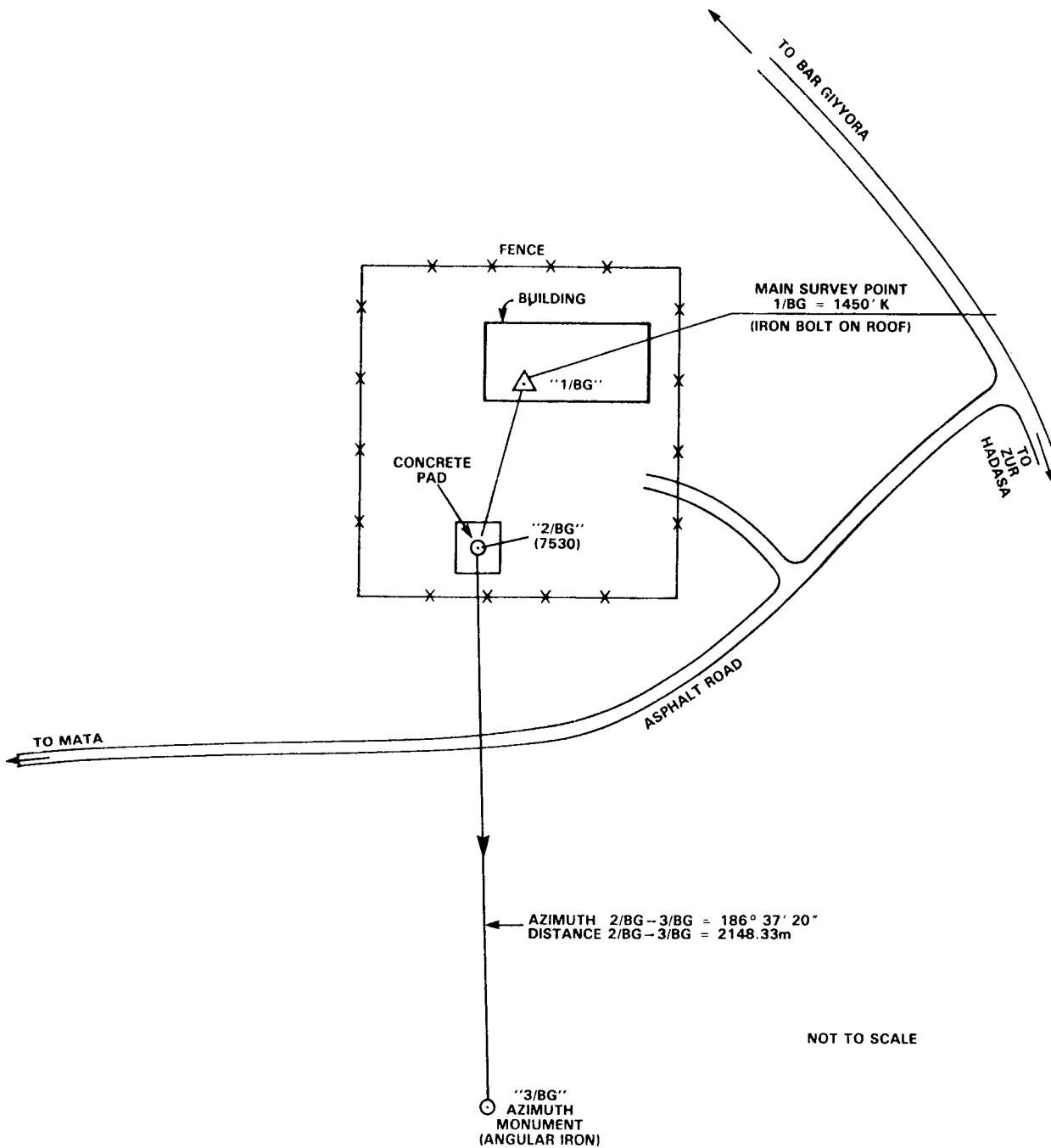


Figure 4-BGYORA. BAR GIYYORA Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 857
Current Site Name: BAR GIYYORA
Location: BAR GIYYORA, ISRAEL

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7530	MOBLAS-2	75300201	02-AUG-85	---	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-- No Previous Occupations --					

- SITE INFORMATION --

Site Number: 854

Current Site Name: BASOVIZZA

Other Site Name: TRIESTE

Location: BASOVIZZA, TRIESTE, ITALY

Geographic Region: MEDITERRANEAN

Tectonic Plate: EURASIAN

-- Site Information Not Yet Available --

-- SITE INFORMATION --

Site Number: 22

Current Site Name: BEAR LAKE

Other Site Name:

Location: BEAR LAKE, UT

Geographic Region: NORTH AMERICA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION.

Site Description: THE SITE IS LOCATED IN WASATCH NATIONAL FOREST TWO MILES SOUTHWEST OF GARDEN CITY, UTAH ON THE SOUTHWEST SHORE OF BEAR LAKE. BEAR LAKE STRADDLES THE BORDER OF UTAH AND IDAHO AND IS APPROXIMATELY 85 MILES NORTH-NORTHEAST OF SALT LAKE CITY. THE SITE IS COMPATIBLE FOR OCCUPATION BY MOBLAS SYSTEMS OR TLRS-1. AT PRESENT, THE PAD IS NOT EQUIPPED TO ACCOMMODATE TLRS-2, -3, OR -4.

Site Topo Map: GARDEN CITY, UTAH. N4152.5-W11122.5/7.5. 1969, U.S.G.S., RESTON, VA 22029

-- GEOLOGICAL INFORMATION --

Geological Province: MIDDLE ROCKY MOUNTAINS

Local Geology: PRECAMBRIAN BASEMENT. THE SITE IS LOCATED EAST OF THE SAN ANDREAS FAULT AS WELL AS EAST OF OTHER LESS WELL KNOWN BUT ACTIVE FAULTS ON THE NORTH AMERICAN PLATE.

Comments: FROST HEAVE IN THE AREA HAS CAUSED VERTICAL PAD OSCILLATIONS OF UP TO FIVE CENTIMETERS.

-- MONUMENT INFORMATION --

Site Number: 22
Current Site Name: BEAR LAKE
Location: BEAR LAKE, UT
Number of Observing Monuments: 1
Surveyed into National Network? YES

Monument Number: 7082
Type of Monument: RUSTY SUNKEN 4'' X 4'' STEEL PLATE
Monument Inscription: "X"
Systems Using Monument: TLRS AND MOBLAS

Latitude: N 41 56' 01.1437''
Longitude: W 111 25' 11.4860''
Elevation Above MSL (Geoid): 1976.515 meters
Height Above Ellipsoid: 1980.515 meters
Survey Source/Date Reported: NASA-GSFC-BFEC, CODE 853/01-NOV-83
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7082 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 22
Current Site Name: BEAR LAKE
Location: BEAR LAKE, UT

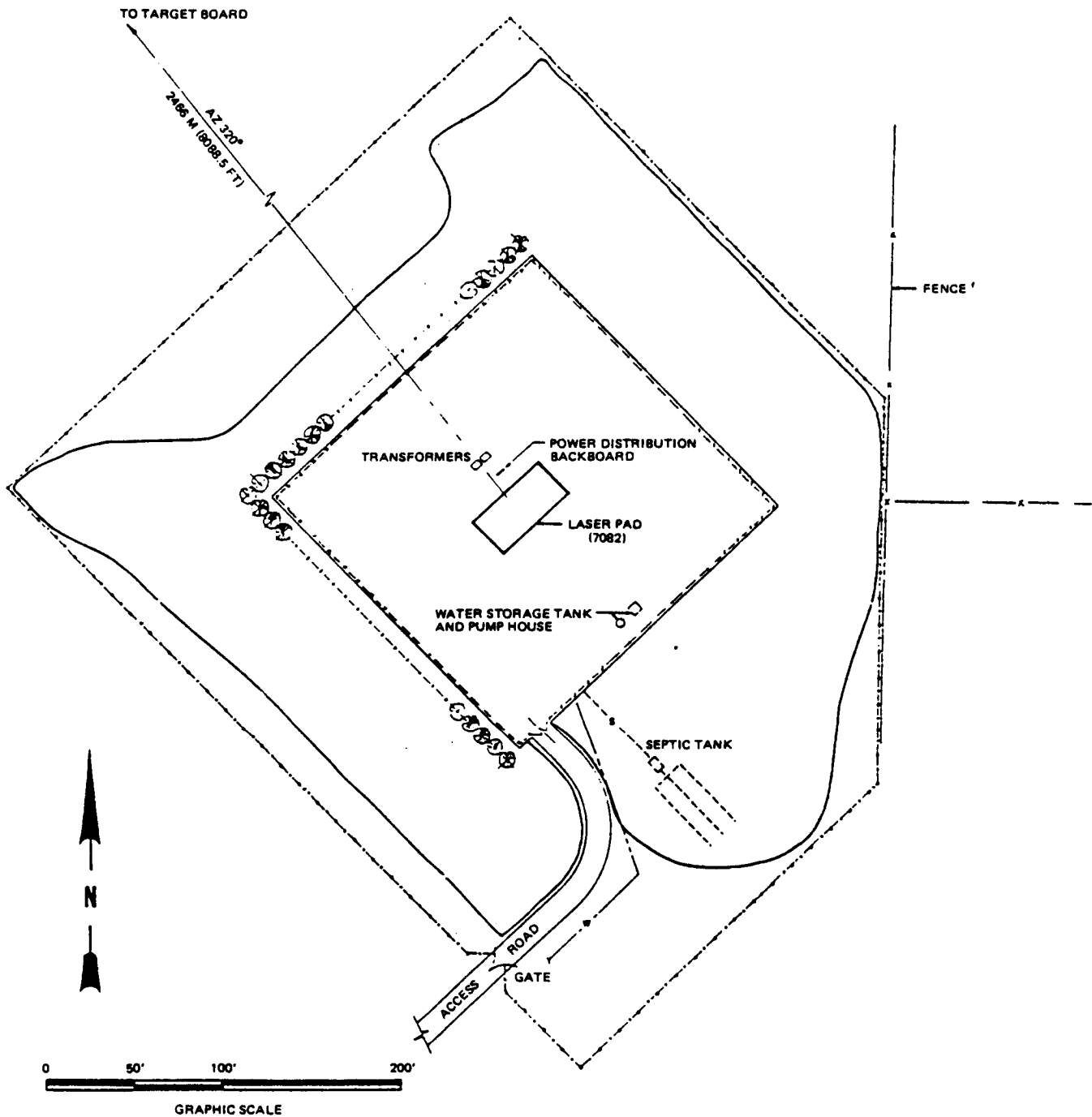


Figure 4-BEAR L. BEAR LAKE Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 22
Current Site Name: BEAR LAKE
Location: BEAR LAKE, UT

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7082	MOBLAS-1	70820101	24-SEP-76	30-NOV-76	YES
7082	MOBLAS-1	70820102	01-JAN-79	20-AUG-79	YES
7082	TLRS-1	70821103	30-MAR-81	06-MAY-81	YES
7082	TLRS-1	70821104	03-NOV-83	10-JAN-84	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 206

Current Site Name: BLACK BUTTE

Other Site Name:

Location: BLACK BUTTE MOUNTAIN, CA

Geographic Region: CALIFORNIA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION.

Site Description: THE SITE IS APPROXIMATELY THIRTY MILES EAST OF INDIO, CALIFORNIA AT THE CHIRIACO SUMMIT AIRSTRIP ON RIVERSIDE COUNTY PROPERTY. AT PRESENT, THE MONUMENT IS COMPATIBLE FOR OCCUPATION BY MOBILE VLBI SYSTEMS AND TLRs-1 ONLY.

Site Topo Map: CHUCKWALLA MOUNTAINS, CALIFORNIA, 1963, 7.5 QUAD, U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: MOJAVE DESERT

Local Geology: QUATERNARY ALLUVIUM

Comments: THE SITE WILL BE PART OF THE U.S.G.S. TRILATERATION NETWORK.

-- MONUMENT INFORMATION --

Site Number: 206
Current Site Name: BLACK BUTTE
Location: BLACK BUTTE MOUNTAIN, CA
Number of Observing Monuments: 1
Surveyed into National Network? NO

Monument Number: 7269
Type of Monument: NGS STATION DISK
Monument Inscription: BLACK BUTTE NCMN 1982
Systems Using Monument: MOBILE VLBI

Latitude: N 33 39' 49.48289''
Longitude: W 115 43' 11.65972''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 506.338 meters
Survey Source/Date Reported: NGS/WGS 72/01-JUL-87
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7269 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS/GPS ADJUSTMENT

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	BLACK BUTTE #2	-34.797	-19.011	-49.946
--	BLACK BUTTE #1	92.912	-23.411	28.632
--	BLACK BUTTE #3	-20.880	62.527	75.208

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	BLACK BUTTE #2	-59.435	-23.009	-0.861
--	BLACK BUTTE #1	34.489	93.867	-0.132
--	BLACK BUTTE #3	88.799	-45.947	2.347

-- SITE SKETCH --

Site Number: 206
Current Site Name: BLACK BUTTE
Location: BLACK BUTTE MOUNTAIN, CA

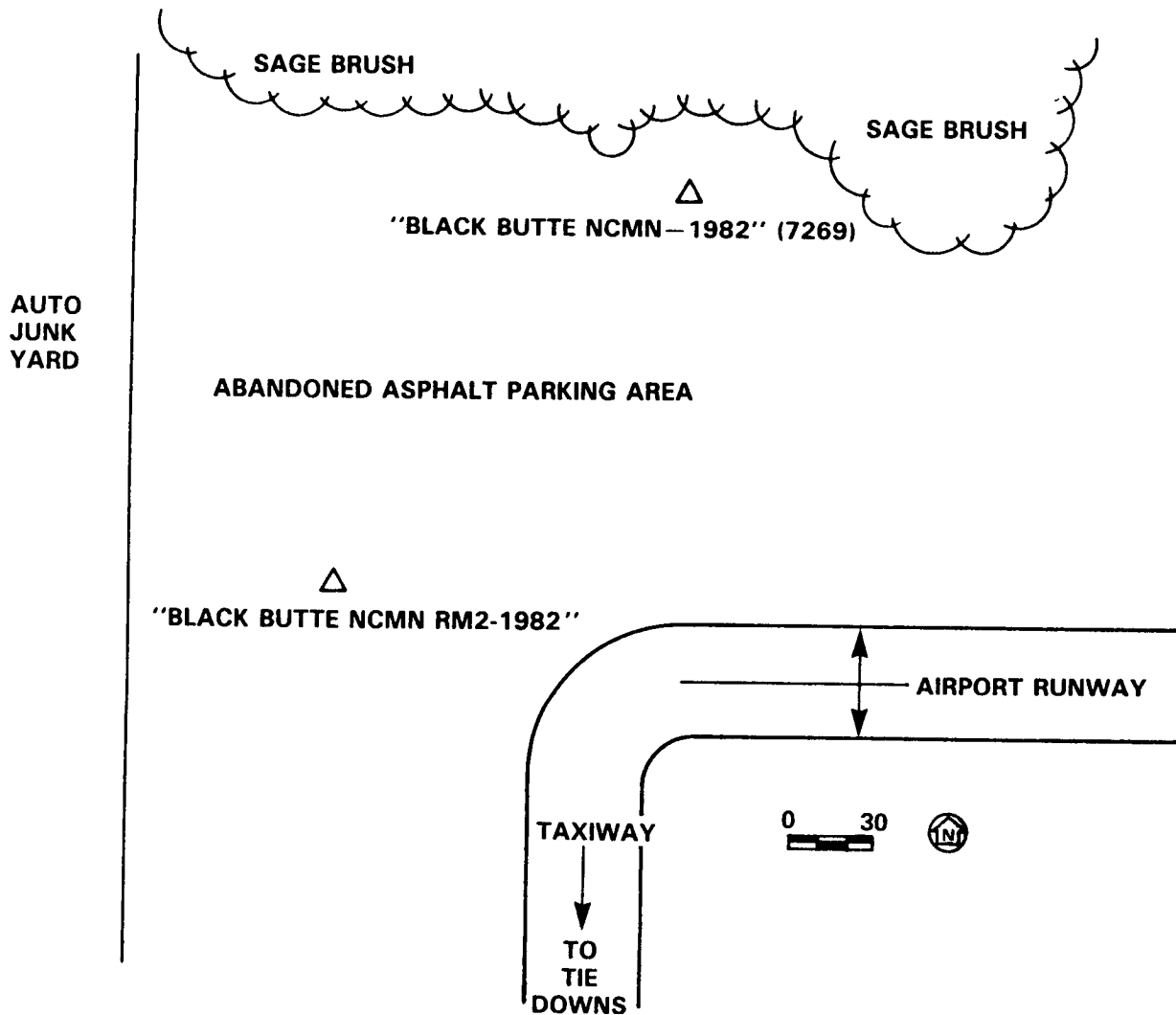


Figure 4-BL BUT. BLACK BUTTE Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 206
 Current Site Name: BLACK BUTTE
 Location: BLACK BUTTE MOUNTAIN, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7269	MV-2	72695201	08-NOV-83	11-NOV-83	YES
7269	MV-3	72695302	03-MAR-84	04-MAR-84	YES
7269	MV-3	72695303	12-JAN-85	16-JAN-85	YES
7269	MV-3	72695304	17-MAY-86	19-MAY-86	YES
7269	MV-3	72695305	26-OCT-86	27-OCT-86	YES
7269	MV-3	72695306	02-FEB-87	04-FEB-87	NO
7269	MV-2	72695207	17-MAY-87	18-MAY-87	NO
7269	MV-2	72695208	21-OCT-87	22-OCT-87	NO

-- SITE INFORMATION --

Site Number: 70

Current Site Name: CABO SAN LUCAS

Other Site Name:

Location: CABO SAN LUCAS, BAJA, MEXICO

Geographic Region: NORTH AMERICA

Tectonic Plate: PACIFIC

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION.

Site Description: THE SITE IS LOCATED ON THE SOUTHERN TIP OF THE BAJA CALIFORNIA PENINSULA FIVE KILOMETERS NORTH OF CABO SAN LUCAS, MEXICO. A CONCRETE WALL STRUCTURE WITH A TARP WAS USED TO HOUSE TLRS-2 DURING ITS OCCUPATION OF THE SITE IN FEBRUARY 1984. THE SITE CAN NOW ACCOMMODATE THE OTHER TLRS SYSTEMS.

Site Topo Map: UNKNOWN

-- GEOLOGICAL INFORMATION --

Geological Province: BAJA CALIFORNIA

Local Geology: GRANITE WITH A THIN QUATERNARY COVERING OF ALLUVIUM WITH LARGE GRANITIC BOULDERS.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 70
Current Site Name: CABO SAN LUCAS
Location: CABO SAN LUCAS, BAJA, MEXICO
Number of Observing Monuments: 1
Surveyed into National Network? NO

Monument Number: 7882
Type of Monument: NASA/GSFC STANDARD BRASS DISK
Monument Inscription: CABO SAN LUCAS 7882 1983
Systems Using Monument: TLRS

Latitude: N 22 55' 03.953''
Longitude: W 109 51' 51.041''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 128.367 meters
Survey Source/Date Reported: BFEC/12-OCT-84
Datum/Ellipsoid: MERCURY 1960 (STDN)/FISHER 1960

Comments: NONE

Differential Coordinates FROM Observing Monument 7882 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 70
 Current Site Name: CABO SAN LUCAS
 Location: CABO SAN LUCAS, BAJA, MEXICO

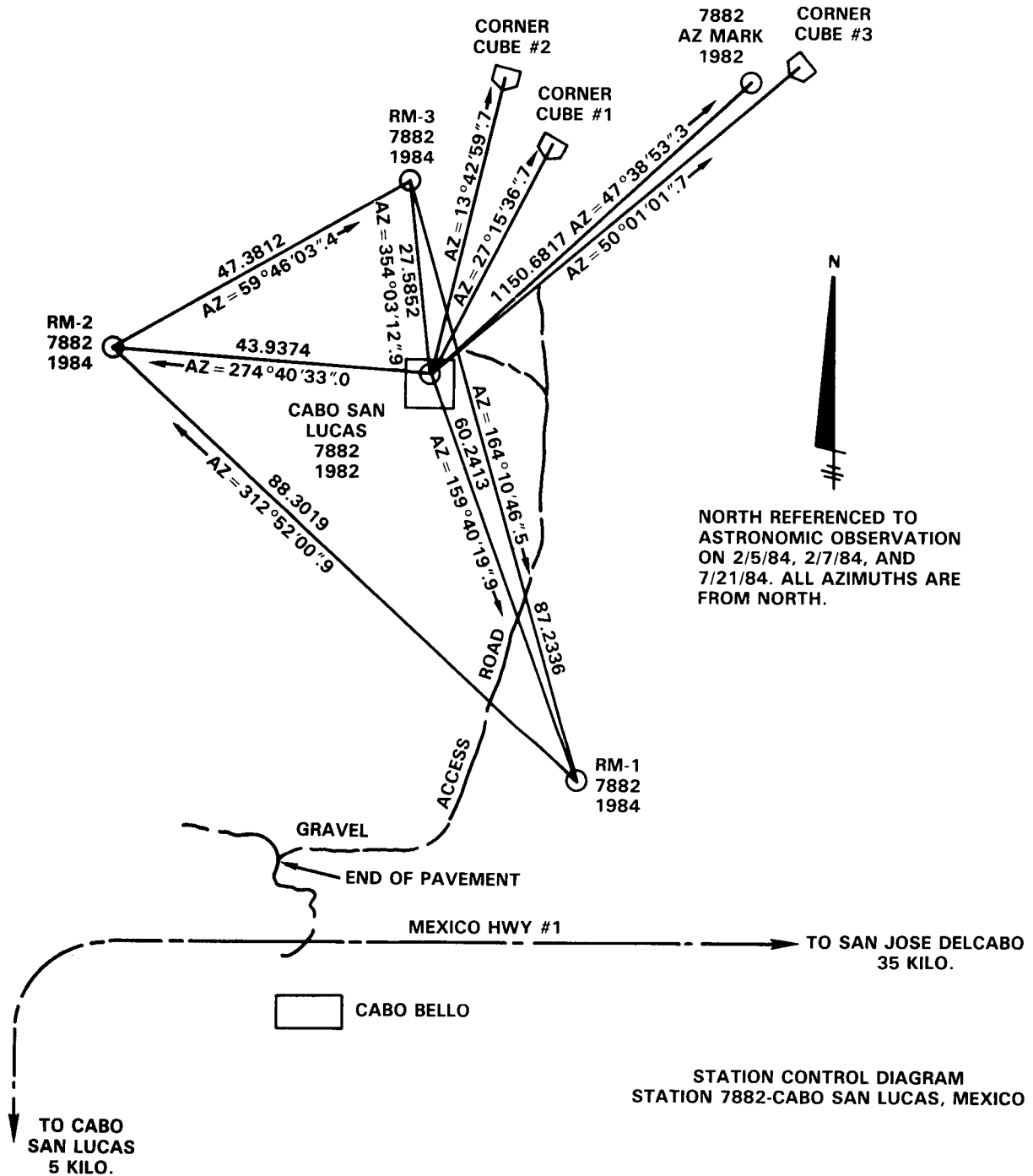


Figure 4-CABO. CABO SAN LUCAS Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 70
Current Site Name: CABO SAN LUCAS
Location: CABO SAN LUCAS, BAJA, MEXICO

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7882	TLRS-2	78821201	01-FEB-84	10-MAR-84	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 805

Current Site Name: CAPE YAKATAGA

Other Site Name:

Location: CAPE YAKATAGA, AK

Geographic Region: ALASKA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION.

Site Description: THE SITE IS LOCATED IN SOUTHERN ALASKA ON THE GULF OF ALASKA NEAR THE PANHANDLE. THE SITE IS FIVE KILOMETERS WEST OF CAPE YAKATAGA NEAR THE YAKATAGA AIRPORT. THE AIRPORT IS A PARTIALLY ABANDONED WORLD WAR II AIRPORT WITH A GRAVEL RUNWAY. THE OBSERVING MONUMENT IS COMPATIBLE FOR OCCUPATION BY THE MOBILE VLBI SYSTEMS.

Site Topo Map: BERING GLACIER (A-4), ALASKA. N6000- W14207.5/ 15 X 22.5 U.S.G.S., RESTON, VA.

-- GEOLOGICAL INFORMATION --

Geological Province: COPPER RIVER DELTA

Local Geology: QUATERNARY ALLUVIUM, BEACH DEPOSIT.

Comments: THIS REGION IS A SEISMIC GAP WHICH IS A CANDIDATE LOCATION FOR A MAJOR EARTHQUAKE.

-- MONUMENT INFORMATION --

Site Number: 805
 Current Site Name: CAPE YAKATAGA
 Location: CAPE YAKATAGA, AK
 Number of Observing Monuments: 1
 Surveyed into National Network? NO

Monument Number: 7277
 Type of Monument: MODIFIED SLEEVED CLASS A BENCH MARK
 Monument Inscription: NONE
 Systems Using Monument: MV-2 ONLY

Latitude: N 60 04' 53.1058''
 Longitude: W 142 29' 11.9030''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 17.384 meters
 Survey Source/Date Reported: NGS/01-JAN-86
 Datum/Ellipsoid: WGS 72

Comments: THE SYSTEM LIMITATION IS DUE TO THE TRANSPORTATION TO THE SITE NOT TO THE SITE FACILITIES.

Differential Coordinates FROM Observing Monument 7277 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS GPS RESULTS JANUARY 1986

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	G 142	-0.621	-33.664	-12.807
--	YAK 2	-148.032	-60.230	-94.464
--	YAKK	-776.561	982.555	-12.252

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	G 142	-24.583	26.324	-0.630
--	YAK 2			
--	YAKK			

-- SITE SKETCH --

Site Number: 805
Current Site Name: CAPE YAKATAGA
Location: CAPE YAKATAGA, AK

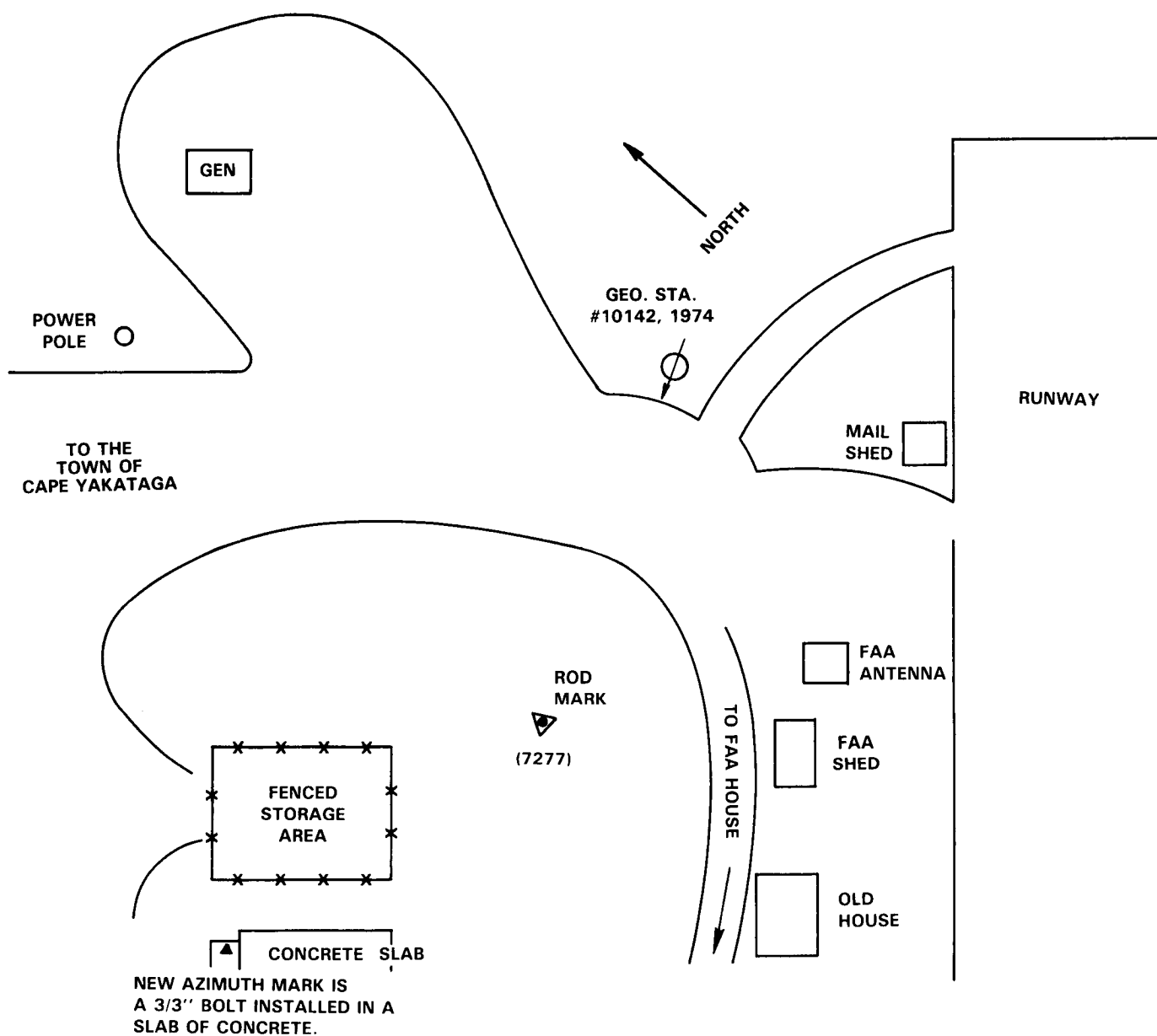


Figure 4-CYAKTG. CAPE YAKATAGA Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 805
Current Site Name: CAPE YAKATAGA
Location: CAPE YAKATAGA, AK

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
--------------------	---------------------	--------------------------	------------------	----------------	-----------------

-- No Previous Occupations --

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7277	MV-2	72775201	31-JUL-84	02-AUG-84	YES
7277	MV-2	72775202	05-AUG-85	06-AUG-85	YES
7277	MV-2	72775203	10-AUG-86	12-AUG-86	YES
7277	MV-2	72775204	04-AUG-87	06-AUG-87	NO

-- SITE INFORMATION --

Site Number: 892

Current Site Name: CERRO TOLOLO
Other Site Name:
Location: CERRO TOLOLO, CHILE
Geographic Region: SOUTH AMERICA
Tectonic Plate: SOUTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF GLOBAL PLATE MOTION, INTERNAL PLATE DEFORMATION, AND PLATE STABILITY.

Site Description: THE SITE IS LOCATED AT THE CERRO TOLOLO OBSERVATORY ON THE WESTERN COAST OF SOUTH AMERICA NEAR THE TOWN OF CERRO TOLOLO IN CENTRAL CHILE. A 25-FOOT BY 25-FOOT PAD IS LOCATED NEAR THE LOWELL TELESCOPE. THIS PAD CAN ACCOMMODATE ALL TLRS'S AS WELL AS THE EUROPEAN MOBILE LASER RANGING SYSTEMS MTLRS-1 OR -2.

Site Topo Map: UNKNOWN

-- GEOLOGICAL INFORMATION --

Geological Province: ANDEAN CORDILLERA

Local Geology: GRANITIC INTRUSIVES

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 892
Current Site Name: CERRO TOLOLO
Location: CERRO TOLOLO, CHILE
Number of Observing Monuments: 1
Surveyed into National Network? NO

Monument Number: 7401
Type of Monument: STANDARD NASA DISK
Monument Inscription: 7401
Systems Using Monument: TLRS

Latitude: S 30 10' 07.222''
Longitude: W 70 47' 52.718''
Elevation Above MSL (Geoid): 2123.090 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: BFEC/01-JAN-86
Datum/Ellipsoid: SOUTH AMERICAN DATUM 1956/HAYFORD
INTERNATIONAL 1924

Comments: NONE

Differential Coordinates FROM Observing Monument 7401 TO
Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 892
Current Site Name: CERRO TOLOLO
Location: CERRO TOLOLO, CHILE

-- Site Sketch Not Available --

Figure 4-C TOLO. CERRO TOLOLO Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 892
Current Site Name: CERRO TOLOLO
Location: CERRO TOLOLO, CHILE

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7401	TLRS-1	74011101	14-MAY-84	30-JUN-84	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
--------------------	---------------------	--------------------------	------------------	----------------	-----------------

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 116

Current Site Name: CHILBOLTON

Other Site Name:

Location: CHILBOLTON, UNITED KINGDOM

Geographic Region: EUROPE

Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DEVELOPMENT OF VLBI TECHNIQUES.

Site Description: THE STATION IS LOCATED IN CENTRAL SOUTHERN ENGLAND AT THE CHILBOLTON OBSERVATORY. A 25-METER ANTENNA WAS USED IN A PRELIMINARY MERIT CAMPAIGN IN 1980. THE ANTENNA IS NO LONGER AVAILABLE FOR VLBI USE.

Site Topo Map: UNKNOWN

-- GEOLOGICAL INFORMATION --

Geological Province: UNKNOWN

Local Geology: NOT AVAILABLE

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 116
Current Site Name: CHILBOLTON
Location: CHILBOLTON, UNITED KINGDOM
Number of Observing Monuments: 1
Surveyed into National Network? NO

Monument Number: 7215
Type of Monument: REFERENCE POINT ON ANTENNA
Monument Inscription: NONE
Systems Using Monument: 25-METER RADIO TELESCOPE

Latitude: N 51 08' 40.0594''
Longitude: W 01 26' 13.1012''
Elevation Above MSL (Geoid): 100.02 meters
Height Above Ellipsoid: 100.37 meters
Survey Source/Date Reported: GEODETIC SURVEY OF GREAT BRITAIN/26-JUN-85
Datum/Ellipsoid: OSGB 1970/AIREY SPHEROID

Comments: THE REFERENCE POINT IS THE INTERSECTION OF THE AZIMUTH AXES
AND THE HORIZONTAL PLANE ON WHICH THE ALTITUDE AXES ROTATES.

Differential Coordinates FROM Observing Monument 7215 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 116
Current Site Name: CHILBOLTON
Location: CHILBOLTON, UNITED KINGDOM

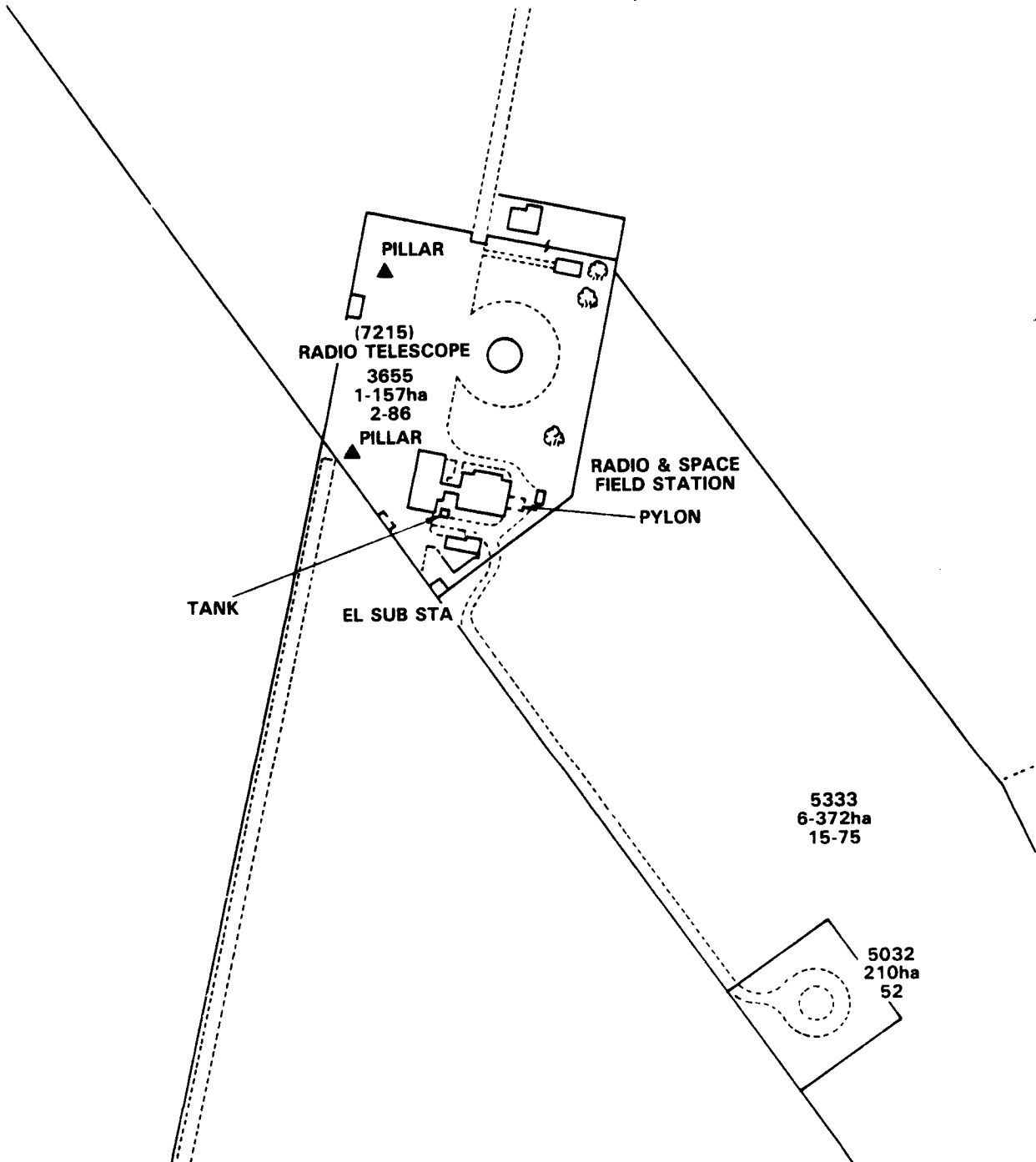


Figure 4-CHLBLT. CHILBOLTON Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 116
 Current Site Name: CHILBOLTON
 Location: CHILBOLTON, UNITED KINGDOM

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7215	TVDS-1	72159101	16-OCT-80	16-OCT-80	YES
7215	TVDS-1	72159101	17-OCT-80	17-OCT-80	YES
7215	TVDS-1	72159101	18-OCT-80	18-OCT-80	YES
7215	TVDS-1	72159101	19-OCT-80	19-OCT-80	YES
7215	TVDS-1	72159101	20-OCT-80	20-OCT-80	YES
7215	TVDS-1	72159101	21-OCT-80	21-OCT-80	YES
7215	TVDS-1	72159101	22-OCT-80	22-OCT-80	YES

-- SITE INFORMATION --

Site Number: 205

Current Site Name: DEADMAN LAKE

Other Site Name:

Location: DEADMAN LAKE, CA

Geographic Region: CALIFORNIA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION.

Site Description: THE SITE IS LOCATED ON THE TWENTYNINE PALMS TRAINING CENTER OF THE U.S. MARINE CORPS. THE SITE CONSIST OF A CLEARED AREA WITH A MONUMENT COMPATIBLE FOR OCCUPATION BY MOBILE VLBI SYSTEMS.

Site Topo Map: GOAT MOUNTAIN, CALIFORNIA. N3415-W11615/7.5, 1955. STATE OF CALIFORNIA. AVAILABLE THRU THE U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: MOJAVE DESERT

Local Geology: PLEISTOCENE NONMARINE DEPOSITS

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 205
 Current Site Name: DEADMAN LAKE
 Location: DEADMAN LAKE, CA
 Number of Observing Monuments: 1
 Surveyed into National Network? YES

Monument Number: 7267
 Type of Monument: USC & GS STATION DISK
 Monument Inscription: SAND HILL 1939-1981
 Systems Using Monument: MOBILE VLBI

Latitude: N 34 15' 17.96707''
 Longitude: W 116 16' 44.28795''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 849.801 meters
 Survey Source/Date Reported: NGS GPS RESULTS/06-MAY-87
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7267 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS GPS RESULTS 07-MAY-87

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	SAND HILL NO. 3	2.028	-6.366	-7.212
--	SAND HILL NO. 4	-6.847	3.743	0.610
--	SAND HILL NO. 5	16.774	-32.636	-33.955

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	SAND HILL NO. 3	-8.669	4.637	-0.084
--	SAND HILL NO. 4	0.687	-7.797	0.075
--	SAND HILL NO. 5	-40.356	29.490	-1.064

-- SITE SKETCH --

Site Number: 205
Current Site Name: DEADMAN LAKE
Location: DEADMAN LAKE, CA

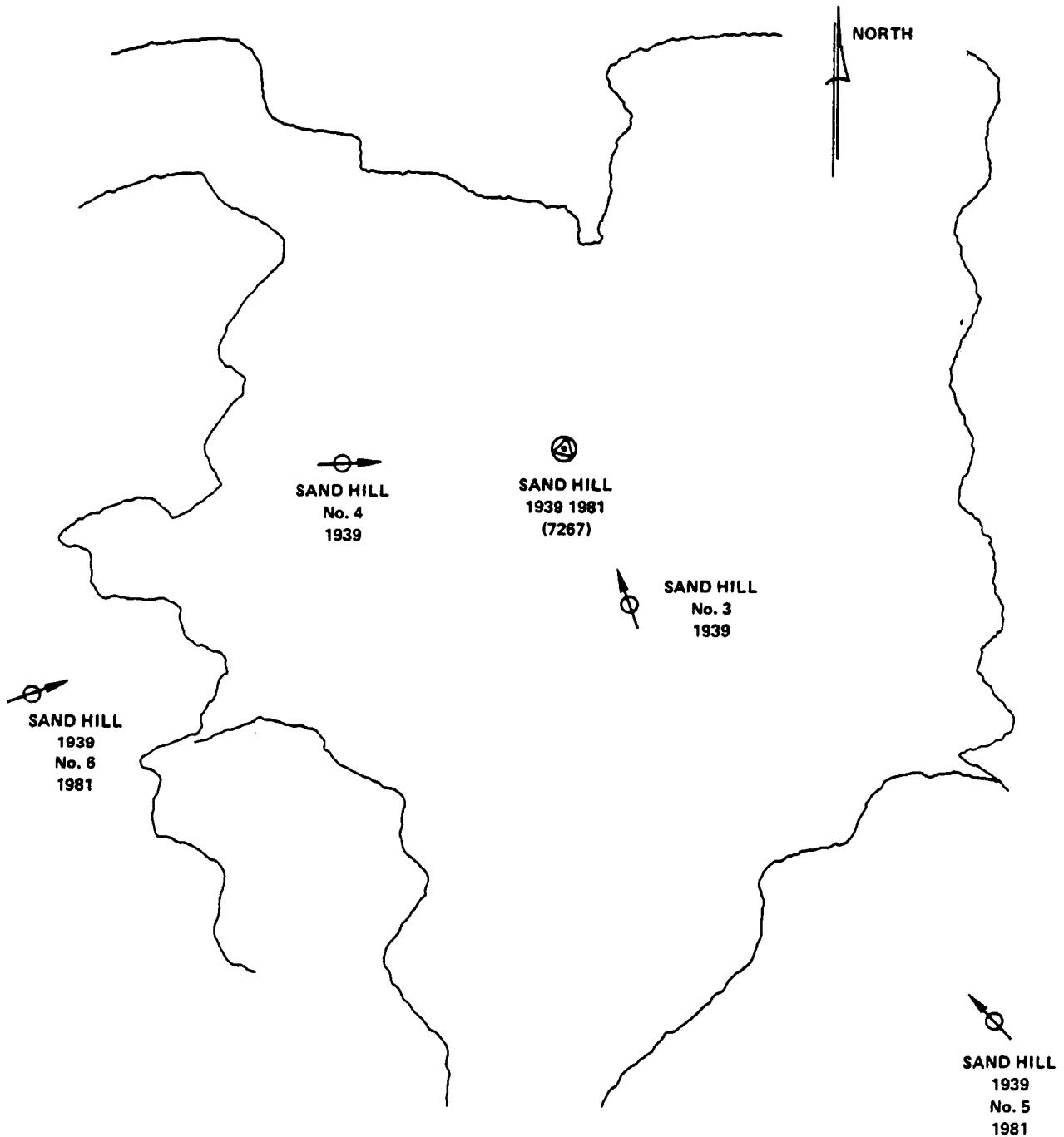


Figure 4-DEADMN. DEADMAN LAKE Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 205
Current Site Name: DEADMAN LAKE
Location: DEADMAN LAKE, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7267	MV-3	72675301	31-AUG-83	01-SEP-83	YES
7267	MV-3	72675302	29-FEB-84	01-MAR-84	YES
7267	MV-2	72675203	09-JAN-85	10-JAN-85	YES
7267	MV-3	72675304	28-MAR-87	29-MAR-87	NO
7267	MV-3	72675305	10-DEC-87	12-DEC-87	NO

-- SITE INFORMATION --

Site Number: 688

Current Site Name: DEMIRKOY

Other Site Name:

Location: DEMIRKOY, TURKEY

Geographic Region: MEDITERRANEAN

Tectonic Plate: EURASIAN

-- Site Information Not Yet Available --

-- SITE INFORMATION --

Site Number: 855

Current Site Name: DIONYSOS

Other Site Name: ATHENS

Location: NATIONAL TECHNICAL UNIV., ATHENS, GREECE

Geographic Region: MEDITERRANEAN

Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION, TECHNIQUE DEVELOPMENT, AND THE KINEMATICS OF THE EAST AND CENTRAL MEDITERRANEAN.

Site Description: THE FIXED LASER STATION IS LOCATED NEAR DIONYSOS, GREECE. LASER RANGING BEGAN AT THIS SITE IN 1968 AND CONTINUED THROUGH 1976. A QUANTEL LASER WAS ACQUIRED IN 1982 AND THE SYSTEM UNDERWENT MAJOR UPGRADES. THE NEW LASER BECAME OPERATIONAL IN 1984. A MOBILE LASER PAD IS LOCATED ADJACENT TO THE BAKER NUNN CAMERA AND THE FIXED STATION. THE PAD IS COMPATIBLE FOR OCCUPATIONS BY MTLRS-1 OR MTLRS-2.

Site Topo Map: "KIFISIA", SCALE 1:50,000; AVAILABLE FROM HELLENIC MILITARY GEOGRAPHIC SERVICE, P. ATROS, ATHENS. TEL: 0030-1-884-2811.

-- GEOLOGICAL INFORMATION --

Geological Province: UNKNOWN

Local Geology: MARBLES AND CRYSTALLINE LIMESTONES (SCREES) OVERLYING METAMORPHIC BASEMENT ROCK.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 855
 Current Site Name: DIONYSOS
 Location: NATIONAL TECHNICAL UNIV., ATHENS, GREECE
 Number of Observing Monuments: 2
 Surveyed into National Network? NO

Monument Number: 7515
 Type of Monument: STANDARD WEGENER DISK; POINT "A" ON
 STANDARD WEGENER PAD
 Monument Inscription: NONE
 Systems Using Monument: MOBILE LASER RANGING SYSTEM

Latitude: N 38 04' 42.821''
 Longitude: E 23 55' 56.316''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 507.61 meters
 Survey Source/Date Reported: NATIONAL TECHNICAL UNIVERSITY AT ATHENS/
 01-APR-86
 Datum/Ellipsoid: WGS 72/WGS 72

Comments: THE WGS 72 COORDINATES WERE DERIVED FROM DOPPLER
 OBSERVATIONS.

Differential Coordinates FROM Observing Monument 7515 TO
 Reference Monuments and Other Observing Monuments

Data Source: NTUA SURVEY

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	CENTRAL PILLAR	-3.90	5.46	6.75

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	CENTRAL PILLAR	-6.15	-6.57	-3.10

-- MONUMENT INFORMATION --

(Continued)

Site Number: 855
Current Site Name: DIONYSOS
Location: NATIONAL TECHNICAL UNIV., ATHENS, GREECE

Monument Number: 7940
Type of Monument: INTERSECTION OF LASER AXES
Monument Inscription: NONE
Systems Using Monument: FIXED LASER

Latitude: N 38 04' 42.159''
Longitude: E 23 55' 57.385''
Elevation Above MSL (Geoid): 509.02 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: NATIONAL TECHNICAL UNIVERSITY IN ATHENS/
01-JUN-83
Datum/Ellipsoid: WGS 72/WGS 72

Comments: THE WGS 72 COORDINATES WERE DERIVED FROM DOPPLER
OBSERVATIONS.

Differential Coordinates FROM Observing Monument 7940 TO
Reference Monuments and Other Observing Monuments

Data Source: NTUA SURVEY

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	CENTRAL PILLAR	-5.85	-23.90	21.94

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	CENTRAL PILLAR	-26.55	19.47	-1.69

-- SITE SKETCH --

Site Number: 855
Current Site Name: DIONYSOS
Location: NATIONAL TECHNICAL UNIV., ATHENS, GREECE

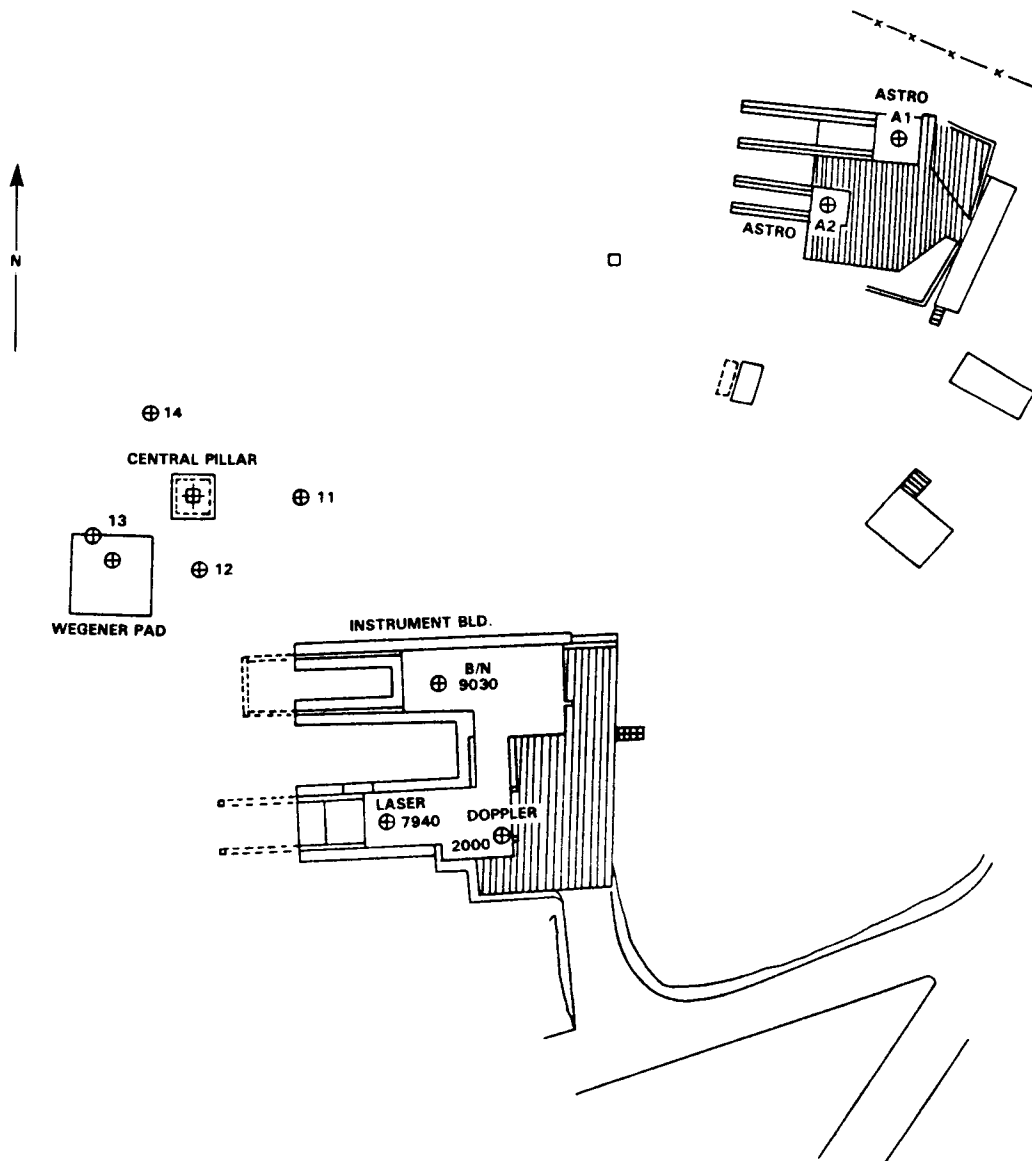


Figure 4-DIONYS. DIONYSOS Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 855
Current Site Name: DIONYSOS
Location: NATIONAL TECHNICAL UNIV., ATHENS, GREECE

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7515	MTLRS-1	75151501	27-JUL-86	30-AUG-86	YES
7515	MTLRS-1	75151502	20-JUL-87	23-OCT-87	NO
7940	GRELAS	79404701	01-MAY-84	---	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
--------------------	---------------------	--------------------------	------------------	----------------	-----------------

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 680

Current Site Name: DIYARBAKIR

Other Site Name:

Location: DIYARBAKIR, TURKEY

Geographic Region: MEDITERRANEAN

Tectonic Plate: ARABIAN

-- Site Information Not Yet Available --

-- SITE INFORMATION --

Site Number: 96

Current Site Name: EASTER ISLAND
Other Site Name: ISLA DE PASCUA
Location: EASTER ISLAND, CHILE
Geographic Region: PACIFIC
Tectonic Plate: NAZCA

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF GLOBAL PLATE MOTION, POLAR MOTION, AND EARTH ROTATION.

Site Description: THE SITE IS LOCATED ON THE SOUTHWEST PART OF THE SOUTH PACIFIC CHILEAN ISLAND, EASTER ISLAND. THE FACILITY IS LOCATED INLAND ABOUT 2.5 MILES NORTHEAST OF MATAVERI AIRPORT. A RAISED PIER WAS CONSTRUCTED AT THIS SITE TO ACCOMMODATE THE UPGRADED TLRS-2. IT IS HOUSED IN A BUILDING SPECIFICALLY DESIGNED FOR TLRS-2 OPERATIONS.

Site Topo Map: UNKNOWN

-- GEOLOGICAL INFORMATION --

Geological Province: EAST SOUTH PACIFIC ISLAND, ABOUT 500 KILOMETERS EAST OF THE CREST OF THE EAST PACIFIC RISE. THIS IS THE ONLY CDP SITE LOCATED ON THE NAZCA TECTONIC PLATE.

Local Geology: THE ISLAND IS THE PRODUCT OF THREE PRINCIPLE VOLCANIC STRUCTURES.

Comments: SOME EVIDENCE SUGGESTS THAT THE ISLAND IS ON A MICROPLATE AT THE EDGE OF THE NAZCA PLATE.

-- MONUMENT INFORMATION --

Site Number: 96
 Current Site Name: EASTER ISLAND
 Location: EASTER ISLAND, CHILE
 Number of Observing Monuments: 1
 Surveyed into National Network? YES

Monument Number: 7061
 Type of Monument: NASA-GSFC STATION DISK
 Monument Inscription: 7061-1983
 Systems Using Monument: TLRS-2

Latitude: S 27 08' 54.6899''
 Longitude: W 109 23' 06.3638''
 Elevation Above MSL (Geoid): 116.77 meters
 Height Above Ellipsoid: NOT AVAILABLE
 Survey Source/Date Reported: NASA-GSFC-BFEC/28-JAN-87
 Datum/Ellipsoid: 1967 ASTRO/INTERNATIONAL ELLIPSOID

Comments: THIS MONUMENT WAS DESTROYED DURING THE CONSTRUCTION OF THE
 TLRS-2 MONUMENT AND SHELTER. MONUMENT 7097 REPLACES THIS MONUMENT.

Differential Coordinates FROM Observing Monument 7061 TO
 Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	7061 RM-1	-13.261	-9.724	23.687
--	7061 RM-2	27.523	-6.877	-4.942
--	7061 RM-3	-14.081	17.102	-18.443

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	7061 RM-1	27.271	-9.821	1.270
--	7061 RM-2	-5.609	28.244	-0.100
--	7061 RM-3	-21.636	-18.963	-1.780

-- MONUMENT INFORMATION --

(Continued)

Site Number: 96
Current Site Name: EASTER ISLAND
Location: EASTER ISLAND, CHILE

Monument Number: 7097
Type of Monument: NASA BRASS DISK
Monument Inscription: 7097-1986
Systems Using Monument: TLRS-2

Latitude: S 27 08' 54.6899''
Longitude: W 109 23' 06.3638''
Elevation Above MSL (Geoid): 118.20 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: BFEC PRELIMINARY ADJUSTMENT/28-JAN-87
Datum/Ellipsoid: 1967 ASTRO/INTERNATIONAL ELLIPSOID

Comments: THIS MONUMENT REPLACES MONUMENT 7061. THIS MONUMENT IS 4' X 4' TO ACCOMMODATE THE NEW CONFIGURATION OF TLRS-2.

Differential Coordinates FROM Observing Monument 7097 TO
Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	7061 RM-1	-12.839	-8.524	24.340
--	7061 RM-2	27.945	-5.677	-4.289
--	7061 RM-3	-13.659	18.302	-17.790
--	7097 RM-4	-17.236	15.838	-11.905

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	7061 RM-1	27.271	-9.821	-0.160
--	7061 RM-2	-5.609	28.244	-1.530
--	7061 RM-3	-21.636	-18.963	-3.210
--	7097 RM-4	-14.900	-21.447	-2.770

-- SITE SKETCH --

Site Number: 96
Current Site Name: EASTER ISLAND
Location: EASTER ISLAND, CHILE

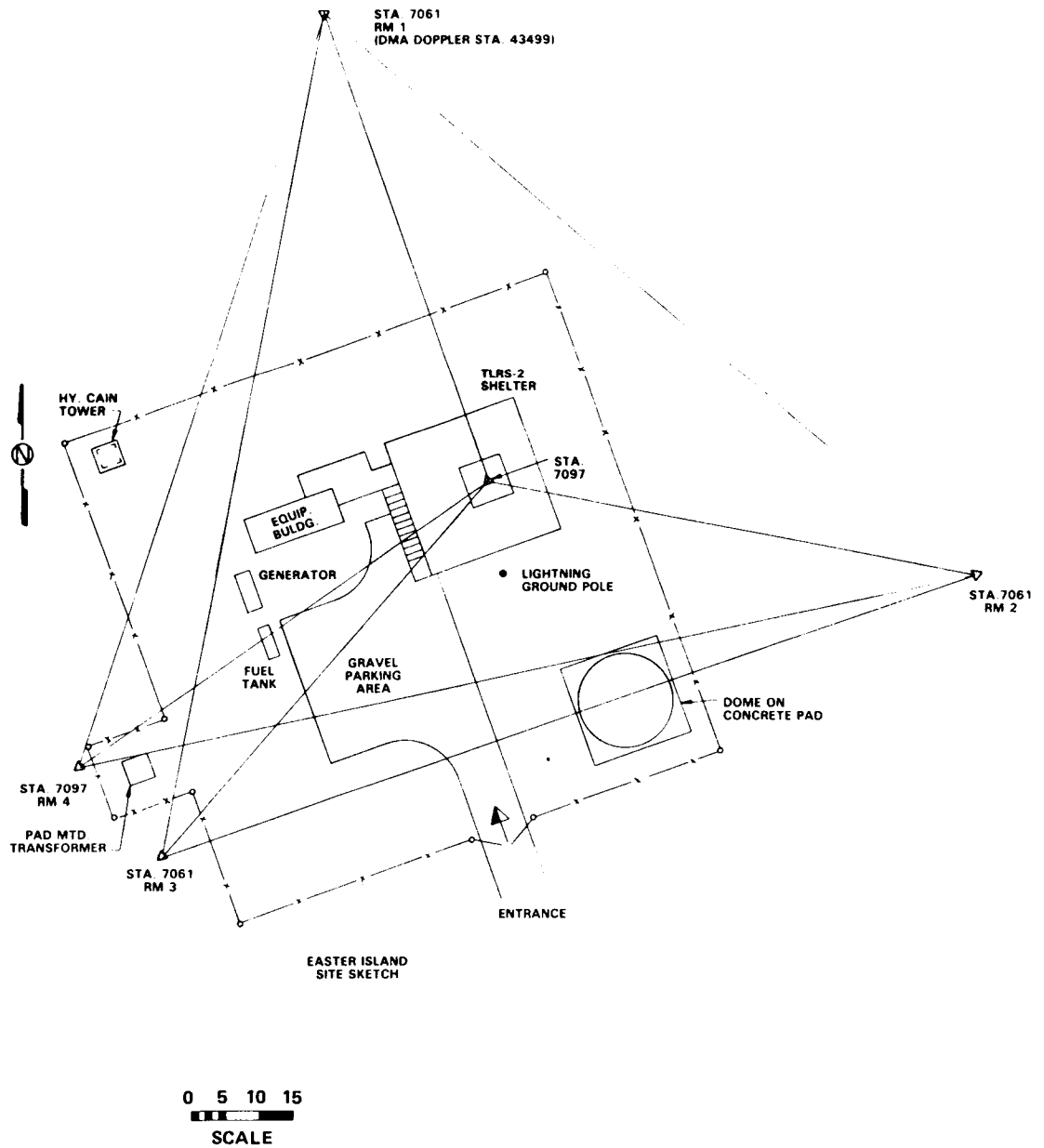


Figure 4-EASTER. EASTER ISLAND Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 96
 Current Site Name: EASTER ISLAND
 Location: EASTER ISLAND, CHILE

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7061	TLRS-2	70611201	10-JAN-83	02-AUG-83	YES
7061	TLRS-2	70611202	19-MAR-84	12-DEC-84	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 143

Current Site Name: EFFELSBERG

Other Site Name: BONN

Location: BONN, WEST GERMANY

Geographic Region: EUROPE

Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF GLOBAL PLATE MOTION.

Site Description: THE STATION IS LOCATED FORTY KILOMETERS FROM BONN AT THE OBSERVATORY SITE OF THE MAX PLANCK INSTITUTE FOR RADIO ASTRONOMY IN EFFELSBERG, WEST GERMANY. ONE FIXED 100-METER TELESCOPE IS USED FOR VLBI MEASUREMENTS.

Site Topo Map: TOPOGRAPHIC MAP 1:50,000 NO. L5506 LANDESVERMESSUNGSAMT NRW

-- GEOLOGICAL INFORMATION --

Geological Province: RHEINISCHES SCHIEFERGEBIRGE

Local Geology: RHENANIAN SLATE. DEVONIAN, SILURIAN, CAMBRIAN AGES. THE SITE IS LOCATED ON VALLEY FILL SEDIMENTS.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 143
Current Site Name: EFFELSBURG
Location: BONN, WEST GERMANY
Number of Observing Monuments: 1
Surveyed into National Network? YES

Monument Number: 7203
Type of Monument: MEASUREMENT POINT ON THE RADIO TELESCOPE
Monument Inscription: NONE
Systems Using Monument: 100-METER RADIO TELESCOPE

Latitude: N 50 31' 32.342''
Longitude: E 06 53' 05.286''
Elevation Above MSL (Geoid): 369.082 meters
Height Above Ellipsoid: 370.182 meters
Survey Source/Date Reported: GEODETIC INSTITUTE OF BONN/01-APR-86
Datum/Ellipsoid: EUROPEAN DATUM 50 (GEOID HEIGHT OF 7203=+1.1M)

Comments: THE MEASUREMENT POINT IS THE INTERSECTION OF THE ELEVATION
AXES AND THE VERTICAL AXES.

Differential Coordinates FROM Observing Monument 7203 TO
Reference Monuments and Other Observing Monuments

Data Source: GEODETIC INSTITUTE OF BONN

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	BESUCHER PAVILION (DOPPLER 1)	-147.93	179.62	100.93

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 143
Current Site Name: EFFELSBURG
Location: BONN, WEST GERMANY

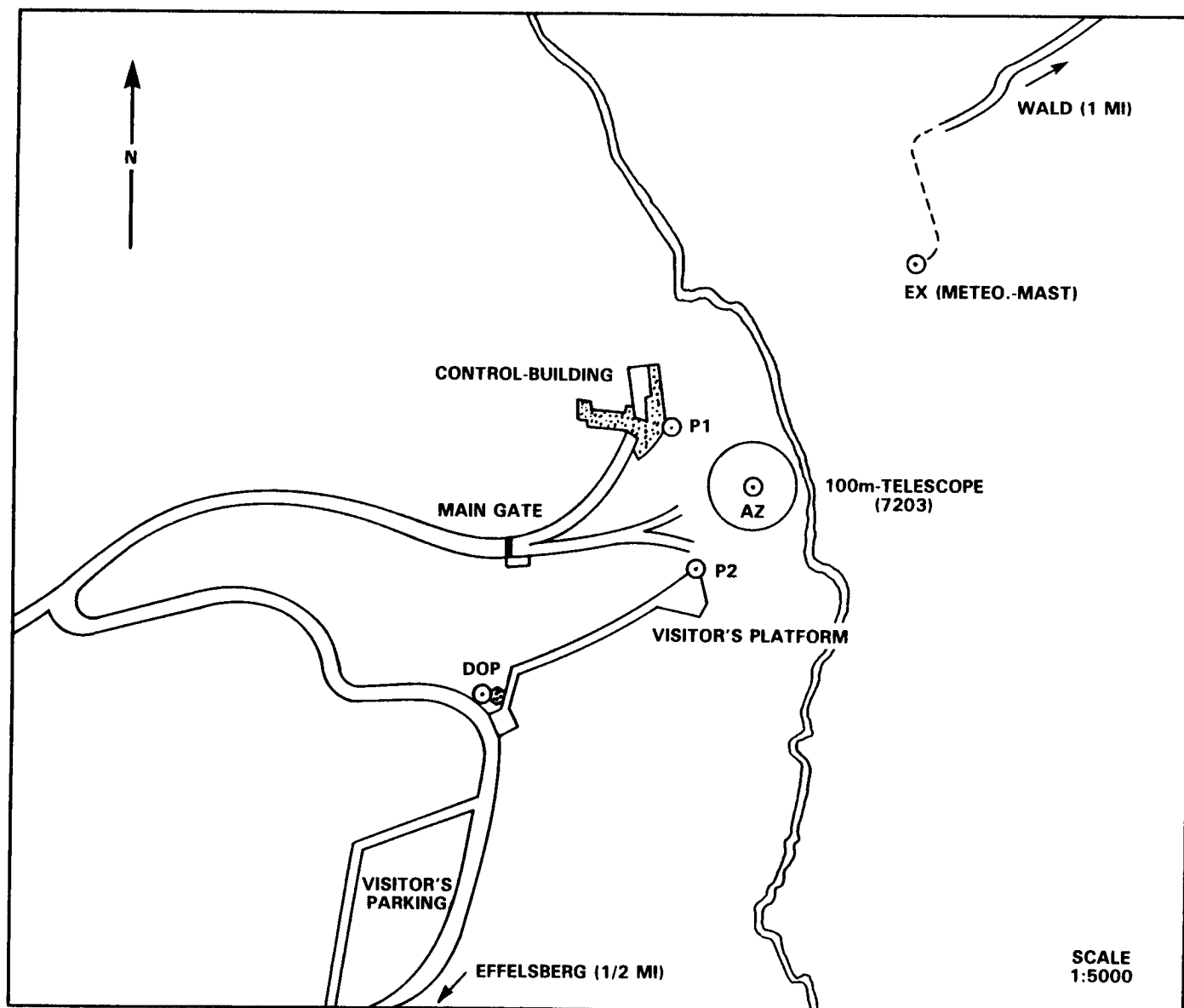


Figure 4-EFLBRG. EFFELSBURG Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 143
Current Site Name: EFFELSBURG
Location: BONN, WEST GERMANY

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
--------------------	---------------------	--------------------------	------------------	----------------	-----------------

-- No Previous Occupations --

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7203	100-METER	72037901	26-JUL-80	26-JUL-80	YES
7203	100-METER	72037901	27-JUL-80	27-JUL-80	YES
7203	100-METER	72037901	26-SEP-80	26-SEP-80	YES
7203	100-METER	72037901	27-SEP-80	27-SEP-80	YES
7203	100-METER	72037901	28-SEP-80	28-SEP-80	YES
7203	100-METER	72037901	05-MAY-83	05-MAY-83	YES

-- SITE INFORMATION --

Site Number: 26

Current Site Name: ELY

Other Site Name: DUCKWATER

Location: ELY, NV

Geographic Region: NORTH AMERICA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE STABILITY, INTERNAL PLATE DEFORMATION, AND REGIONAL DEFORMATION.

Site Description: THE SITE IS LOCATED AT THE ELY AIRPORT ABOUT FOUR MILES NORTH-NORTHWEST OF ELY, NEVADA. THE SITE IS ON THE NORTH SIDE OF THE FAA AND NWS BUILDING ADJACENT TO THE TAXIWAY. THE SITE IS COMPATIBLE FOR OCCUPATION BY THE MOBILE VLBI ANTENNAS.

Site Topo Map: MCGILL, NEVADA. N3915-W11445/15, 1958, STATE OF NEVADA. AVAILABLE THROUGH THE U.S.G.S., RESTON, VA. 22092

-- GEOLOGICAL INFORMATION --

Geological Province: BASIN AND RANGE

Local Geology: QUATERNARY ALLUVIUM DEPOSITS

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 26
 Current Site Name: ELY
 Location: ELY, NV
 Number of Observing Monuments: 2
 Surveyed into National Network? YES

Monument Number: 7257
 Type of Monument: USC & GS STATION DISK
 Monument Inscription: ELY AIRPORT 1954
 Systems Using Monument: MOBILE VLBI

Latitude: N 39 17' 35.20999''
 Longitude: W 114 50' 34.25423''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 1888.809 meters
 Survey Source/Date Reported: NGS GPS RESULTS/01-JUL-87
 Datum/Ellipsoid: WGS 1972

Comments: THE MARKER WAS OCCUPIED DURING THE APRIL 1984 BURST WHEN
 REFERENCE MONUMENT NO. 2 MARKER WAS NOT FOUND. THE MARKER HAS SINCE
 BEEN FOUND.

Differential Coordinates FROM Observing Monument 7257 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS GPS RESULTS JULY 1987

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	ELY NCMN 1	34.915	31.384	52.205
7286	ELY AIRPORT RM NO. 2 1954	-16.416	9.261	2.199

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	ELY NCMN 1	67.728	18.499	-0.333
7286	ELY AIRPORT RM NO. 2 1954	2.656	-18.788	0.226

-- MONUMENT INFORMATION --

(Continued)

Site Number: 26
Current Site Name: ELY
Location: ELY, NV

Monument Number: 7286
Type of Monument: USC & GS STATION DISK
Monument Inscription: ELY AIRPORT RM NO. 2 1954
Systems Using Monument: MOBILE VLBI

Latitude: N 39 17' 35.29609''
Longitude: W 114 50' 35.03805''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 1889.035 meters
Survey Source/Date Reported: NGS GPS RESULTS/01-JUL-87
Datum/Ellipsoid: WGS 1972

Comments: THE CREW COULD NOT FIND THIS DISK DURING THE FIRST OCCUPATION
OF THE SITE. THIS MONUMENT WILL BE USED FOR ALL SUBSEQUENT OCCUPATIONS.

Differential Coordinates FROM Observing Monument 7286 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS GPS RESULTS

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	ELY NCMN 1	51.331	22.123	50.006
--	ELY NCMN 2	-2.261	-20.072	-23.126
--	ELY NCMN 3	-43.017	51.177	34.009
7257	ELY AIRPORT 1954	16.416	-9.261	-2.199

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	ELY NCMN 1	65.072	37.286	-0.559
--	ELY NCMN 2	-30.034	6.381	0.186
--	ELY NCMN 3	44.285	-60.538	-0.416
7257	ELY AIRPORT 1954	-2.656	18.788	-0.226

-- SITE SKETCH --

Site Number: 26
Current Site Name: ELY
Location: ELY, NV

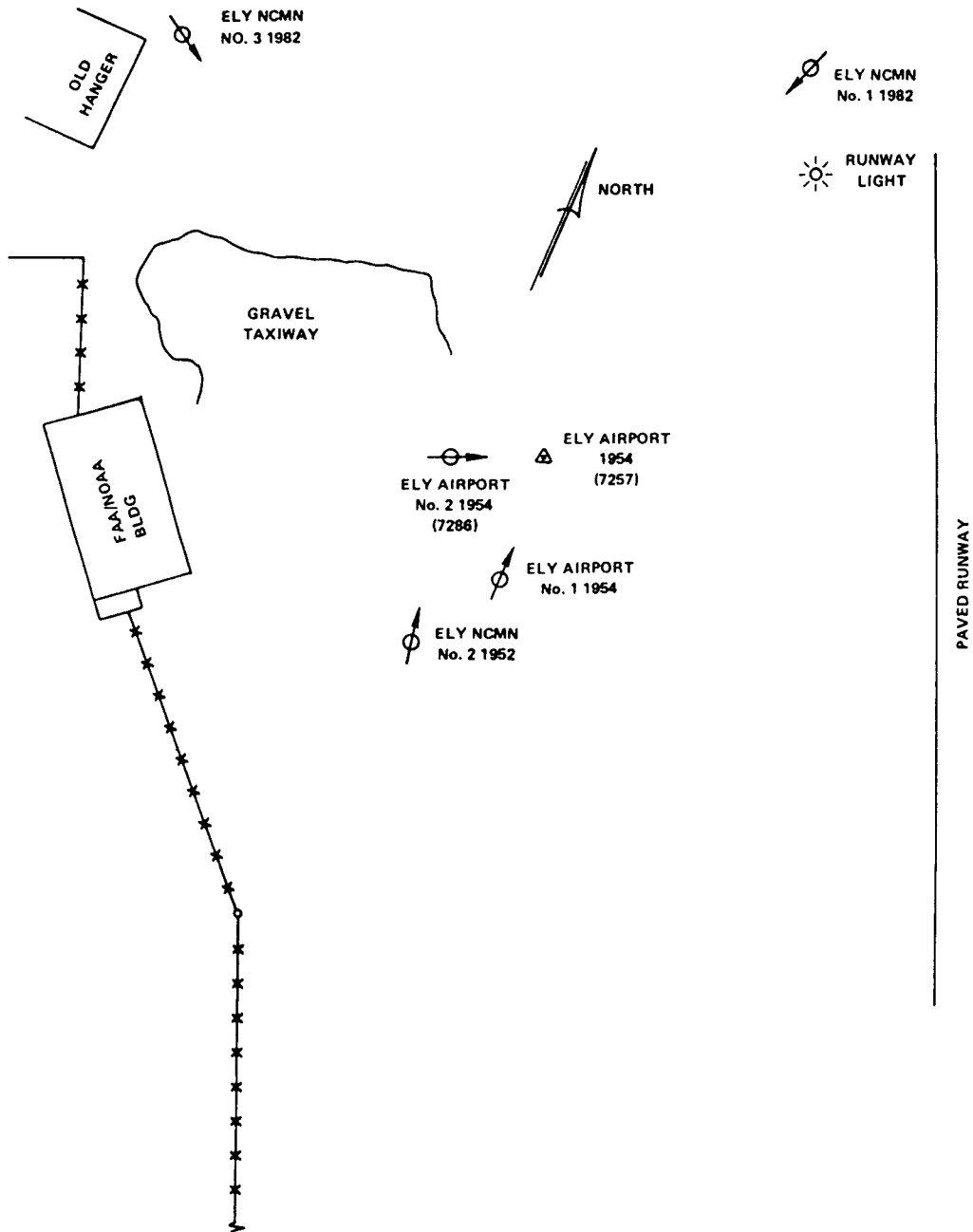


Figure 4-ELY. ELY Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 26
 Current Site Name: ELY
 Location: ELY, NV

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----

-- No Previous Occupations --

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7257	MV-2	72575201	06-JUN-83	07-JUN-83	YES
7257	MV-3	72575302	21-APR-84	22-APR-84	YES
7286	MV-3	72865301	06-MAY-85	07-MAY-85	YES
7286	MV-2	72865202	02-APR-86	03-APR-86	YES
7286	MV-3	72865303	10-MAY-87	11-MAY-87	NO

-- SITE INFORMATION --

Site Number: 219

Current Site Name: ENSENADA
Other Site Name: SAN FELIPE
Location: ENSENADA, BAJA, MEXICO
Geographic Region: NORTH AMERICA
Tectonic Plate: PACIFIC

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION.

Site Description: THE SITE IS LOCATED IN BAJA CALIFORNIA ON A SMALL KNOLL IN A VINEYARD APPROXIMATELY 53 MILES SOUTH OF THE TOWN OF ENSENADA. A 25-FOOT BY 25-FOOT PAD WITH THE BOLT INSERTS WAS CONSTRUCTED AT THE SITE TO ACCOMMODATE TLRS-3 OR -4 LASER RANGING SYSTEMS. THE SITE IS SOUTH OF THE AQUA BLANCA FAULT.

Site Topo Map: UNKNOWN

-- GEOLOGICAL INFORMATION --

Geological Province: BAJA CALIFORNIA

Local Geology: PREBATHOLITHIC: MIXED METAMORPHIC AND PLUTONIC ROCKS. OUTCROP IS PART OF A GRANITIC BATHOLITH.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 219
Current Site Name: ENSENADA
Location: ENSENADA, BAJA, MEXICO
Number of Observing Monuments: 1
Surveyed into National Network? NO

Monument Number: 7883
Type of Monument: NASA/GSFC STANDARD BRASS DISK
Monument Inscription: ENSENADA 7883-1983
Systems Using Monument: TLRS

Latitude: N 31 15' 19.7''
Longitude: W 116 09' 27.6''
Elevation Above MSL (Geoid): 200 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: BFEC/01-AUG-84
Datum/Ellipsoid: MAP SCALE

Comments: NONE

Differential Coordinates FROM Observing Monument 7883 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 219
Current Site Name: ENSENADA
Location: ENSENADA, BAJA, MEXICO

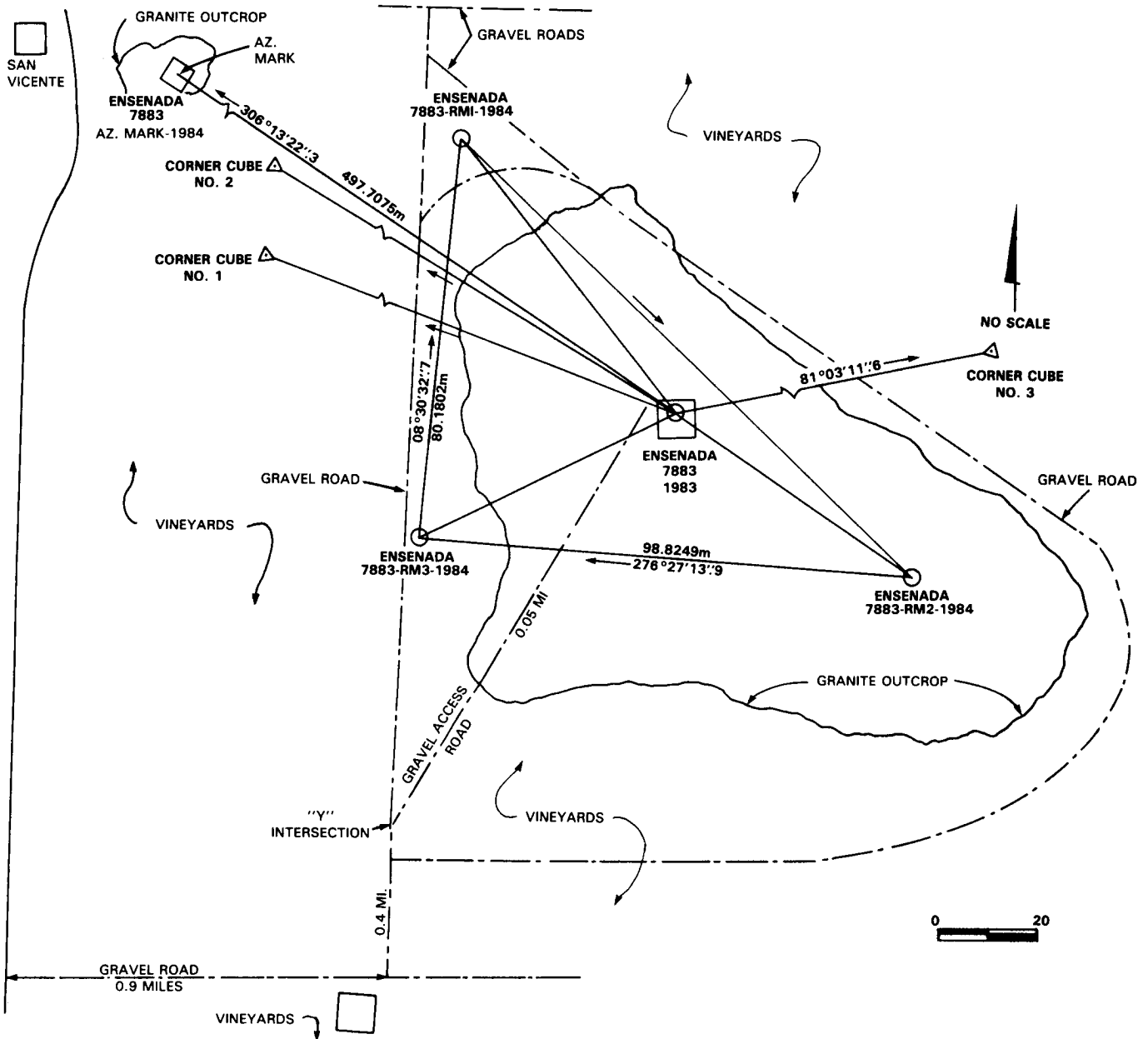


Figure 4-ENSNDA. ENSENADA Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 219
Current Site Name: ENSENADA
Location: ENSENADA, BAJA, MEXICO

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- SITE INFORMATION --

Site Number: 61

Current Site Name: FAIRBANKS
Other Site Name: GILMORE CREEK
Location: FAIRBANKS, AK
Geographic Region: ALASKA
Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION AND GLOBAL PLATE MOTION.

Site Description: THE SITE IS LOCATED IN CENTRAL ALASKA, 22 KILOMETERS NORTHEAST OF FAIRBANKS, AT THE POINT WHERE ROSE CREEK JOINS GILMORE CREEK. A 26-METER ANTENNA IS USED FOR VLBI MEASUREMENTS.

Site Topo Map: FAIRBANKS, ALASKA (NQ 5,6), 1:1,000,000 SERIES. AVAILABLE THROUGH THE U.S.G.S., RESTON, VA. 22092

-- GEOLOGICAL INFORMATION --

Geological Province: CENTRAL MAINLAND ALASKA

Local Geology: PALEOZOIC METAMORPHIC ROCKS

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 61
 Current Site Name: FAIRBANKS
 Location: FAIRBANKS, AK
 Number of Observing Monuments: 2
 Surveyed into National Network? NO

Monument Number: 4047
 Type of Monument: DISK SET IN THE CENTER OF THE FOUNDATION
 OF THE ANTENNA
 Monument Inscription: NONE
 Systems Using Monument: 26-METER (85-FOOT) VLBI ANTENNA

Latitude: N 64 58' 43.81288''
 Longitude: W 147 29' 42.18552''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 306.418 meters
 Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/16-MAR-87
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 4047 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 87-03-16

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	ULASKA	-649.152	709.854	-90.826
--	DOPPLER 30067 1972	-44.574	18.564	-7.977
--	GILCREEK NCMN RM 1 1984	-36.533	-28.929	-21.245
--	GILCREEK NCMN RM 2 1984	21.031	-35.925	0.762
--	GILCREEK NCMN 1984	69.175	-115.150	0.542
7225	NONE (VLBI REFERENCE POINT)	-4.844	-3.095	12.302

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	DOPPLER 30067 1972	-28.398	-39.609	4.452
--	GILCREEK NCMN RM 1 1984	-50.991	4.765	0.355
--	GILCREEK NCMN RM 2 1984	-1.099	41.599	1.354
7225	NONE (VLBI REFERENCE POINT)	-0.006	0.007	13.579

-- MONUMENT INFORMATION --

(Continued)

Site Number: 61
Current Site Name: FAIRBANKS
Location: FAIRBANKS, AK

Monument Number: 7225
Type of Monument: VLBI REFERENCE POINT ON ANTENNA
Monument Inscription: NONE
Systems Using Monument: 26-METER (85-FOOT) VLBI ANTENNA

Latitude: N 64 58' 43.81269''
Longitude: W 147 29' 42.18498''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 319.997 meters
Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/16-MAR-87
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS ANTENNA IS ALSO REFERENCED AS GILMORE CREEK.

Differential Coordinates FROM Observing Monument 7225 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 87-03-16

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	ULASKA	-644.308	712.949	-103.129
--	DOPPLER 30067 1972	-39.730	21.659	-20.279
--	GILCREEK NCMN RM 1 1984	-31.689	-25.834	-33.548
--	GILCREEK NCMN RM 2 1984	25.875	-32.830	-11.540
--	GILCREEK NCMN 1984	74.019	-112.055	-11.761
4047	NONE (MARK ON ANTENNA BASE)	4.844	3.095	-12.302

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	DOPPLER 30067 1972	-28.392	-39.616	-9.127
--	GILCREEK NCMN RM 1 1984	-50.985	4.758	-13.224
--	GILCREEK NCMN RM 2 1984	-1.093	41.592	-12.225
4047	NONE (MARK ON ANTENNA BASE)	0.006	-0.007	-13.579

-- SITE SKETCH --

Site Number: 61
 Current Site Name: FAIRBANKS
 Location: FAIRBANKS, AK

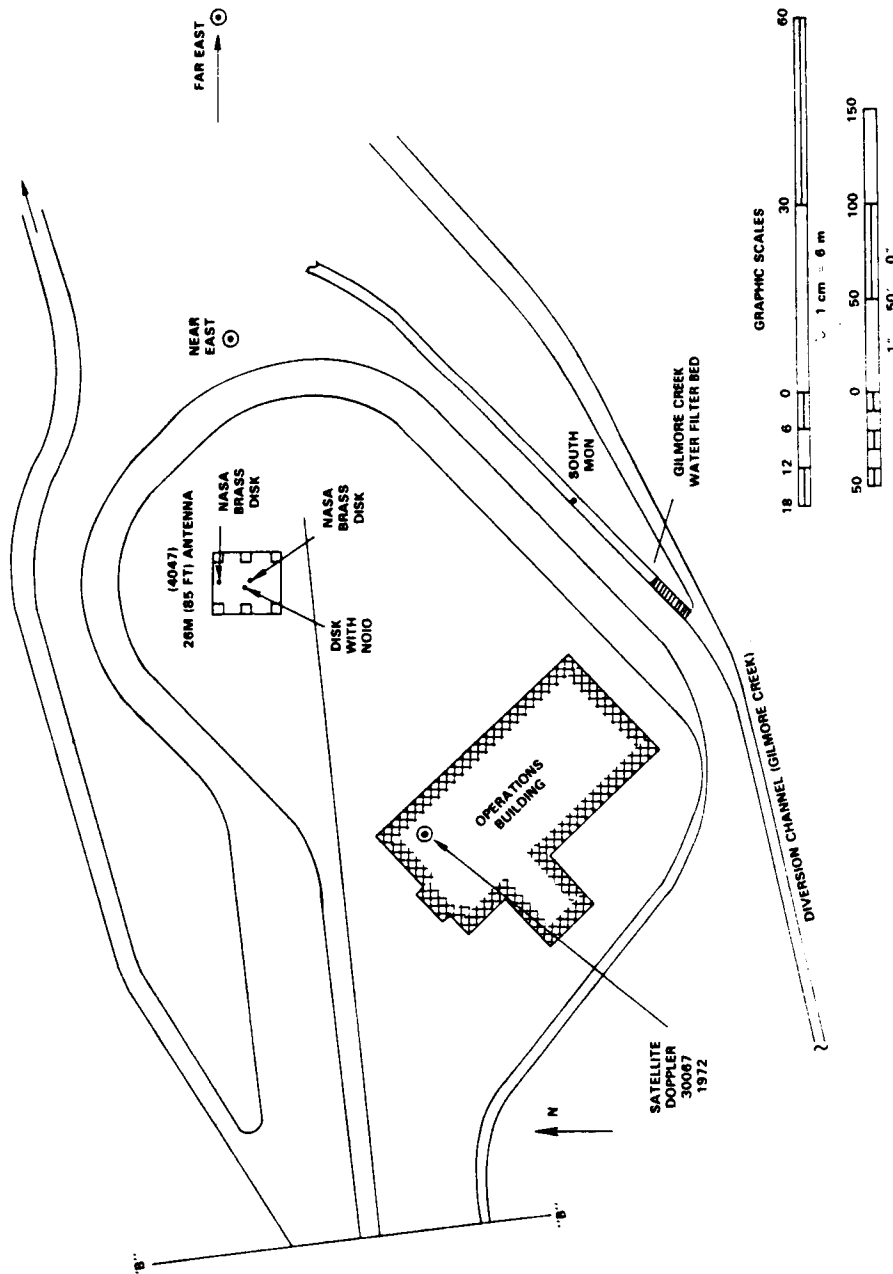


Figure 4-FRBNKS. FAIRBANKS Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 61
Current Site Name: FAIRBANKS
Location: FAIRBANKS, AK

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
4047	TVDS-4	40479401	07-JUL-84	07-JUL-84	YES
4047	TVDS-4	40479401	14-JUL-84	14-JUL-84	YES
4047	TVDS-4	40479401	21-JUL-84	21-JUL-84	YES
4047	TVDS-4	40479401	23-JUL-84	23-JUL-84	YES
4047	TVDS-4	40479401	28-JUL-84	28-JUL-84	YES
4047	TVDS-4	40479401	31-JUL-84	31-JUL-84	YES
4047	TVDS-4	40479401	04-AUG-84	04-AUG-84	YES
4047	TVDS-4	40479401	07-AUG-84	07-AUG-84	YES
4047	TVDS-4	40479401	24-AUG-84	24-AUG-84	YES
4047	TVDS-4	40479401	28-AUG-84	28-AUG-84	YES
4047	TVDS-4	40479401	30-AUG-84	30-AUG-84	YES
4047	TVDS-4	40479401	02-SEP-84	02-SEP-84	YES
4047	TVDS-4	40479401	07-MAY-85	07-MAY-85	YES
4047	TVDS-4	40479401	15-MAY-85	15-MAY-85	YES
4047	TVDS-4	40479401	19-JUN-85	19-JUN-85	YES
4047	TVDS-4	40479401	06-JUL-85	06-JUL-85	YES
4047	TVDS-4	40479401	20-JUL-85	20-JUL-85	YES
4047	TVDS-4	40479401	27-JUL-85	27-JUL-85	YES
4047	TVDS-4	40479401	10-AUG-85	10-AUG-85	YES
4047	TVDS-4	40479401	24-AUG-85	24-AUG-85	YES
4047	TVDS-4	40479401	04-SEP-85	04-SEP-85	YES
4047	TVDS-4	40479401	30-SEP-85	30-SEP-85	YES
4047	TVDS-4	40479401	21-NOV-85	21-NOV-85	YES
4047	TVDS-4	40479401	12-MAR-86	12-MAR-86	YES
4047	TVDS-4	40479401	13-MAR-86	13-MAR-86	YES
4047	TVDS-4	40479401	01-APR-86	01-APR-86	YES
4047	TVDS-4	40479401	08-APR-86	08 APR-86	YES
4047	TVDS-4	40479401	03-MAY-86	03-MAY-86	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 61
Current Site Name: FAIRBANKS
Location: FAIRBANKS, AK

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
4047	TVDS-4	40479401	13-JUN-86	13-JUN-86	YES
4047	TVDS-4	40479401	18-JUN-86	18-JUN-86	YES
4047	TVDS-4	40479401	05-JUL-86	05-JUL-86	YES
4047	TVDS-4	40479401	12-JUL-86	12-JUL-86	YES
4047	TVDS-4	40479401	22-JUL-86	22-JUL-86	YES
4047	TVDS-4	40479401	26-JUL-86	26-JUL-86	YES
4047	TVDS-4	40479401	31-JUL-86	31-JUL-86	YES
4047	TVDS-4	40479401	02-AUG-86	02-AUG-86	YES
4047	TVDS-4	40479401	11-AUG-86	11-AUG-86	YES
4047	TVDS-4	40479401	18-AUG-86	18-AUG-86	YES
4047	TVDS-4	40479401	05-SEP-86	05-SEP-86	YES
4047	TVDS-4	40479401	23-OCT-86	23-OCT-86	YES
4047	TVDS-4	40479401	31-OCT-86	31-OCT-86	YES
4047	TVDS-4	40479401	05-NOV-86	05-NOV-86	YES
4047	TVDS-4	40479401	07-NOV-86	07-NOV-86	YES
4047	TVDS-4	40479401	05-DEC-86	05-DEC-86	YES
4047	TVDS-4	40479401	14-JAN-87	14-JAN-87	NO
4047	TVDS-4	40479401	20-JAN-87	20-JAN-87	NO
4047	TVDS-4	40479401	19-FEB-87	19-FEB-87	NO
4047	TVDS-4	40479401	24-FEB-87	24-FEB-87	NO
4047	TVDS-4	40479401	10-MAR-87	10-MAR-87	NO
4047	TVDS-4	40479401	24-MAR-87	24-MAR-87	NO
4047	TVDS-4	40479401	26-MAR-87	26-MAR-87	NO
4047	TVDS-4	40479401	14-APR-87	14-APR-87	NO
4047	TVDS-4	40479401	21-APR-87	21-APR-87	NO
4047	TVDS-4	40479401	01-MAY-87	01-MAY-87	NO
4047	TVDS-4	40479401	06-MAY-87	06-MAY-87	NO
4047	TVDS-4	40479401	24-MAY-87	24-MAY-87	NO
4047	TVDS-4	40479401	29-MAY-87	29-MAY-87	NO
4047	TVDS-4	40479401	09-JUN-87	09-JUN-87	NO
4047	TVDS-4	40479401	18-JUN-87	18-JUN-87	NO
4047	TVDS-4	40479401	24-JUN-87	24-JUN-87	NO
4047	TVDS-4	40479401	29-JUN-87	29-JUN-87	NO
4047	TVDS-4	40479401	30-JUN-87	30-JUN-87	NO
4047	TVDS-4	40479401	24-JUN-87	24-JUN-87	NO

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 61
Current Site Name: FAIRBANKS
Location: FAIRBANKS, AK

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
4047	TVDS-4	40479401	28-JUN-87	28-JUN-87	NO
4047	TVDS-4	40479401	08-JUL-87	08-JUL-87	NO
4047	TVDS-4	40479401	15-JUL-87	15-JUL-87	NO
4047	TVDS-4	40479401	18-JUL-87	18-JUL-87	NO
4047	TVDS-4	40479401	21-JUL-87	21-JUL-87	NO
4047	TVDS-4	40479401	23-JUL-87	23-JUL-87	NO
4047	TVDS-4	40479401	25-JUL-87	25-JUL-87	NO
4047	TVDS-4	40479401	28-JUL-87	28-JUL-87	NO
4047	TVDS-4	40479401	01-AUG-87	01-AUG-87	NO
4047	TVDS-4	40479401	03-AUG-87	03-AUG-87	NO
4047	TVDS-4	40479401	07-AUG-87	07-AUG-87	NO
4047	TVDS-4	40479401	09-AUG-87	09-AUG-87	NO
4047	TVDS-4	40479401	11-AUG-87	11-AUG-87	NO
4047	TVDS-4	40479401	13-AUG-87	13-AUG-87	NO
4047	TVDS-4	40479401	15-AUG-87	15-AUG-87	NO
4047	TVDS-4	40479401	20-AUG-87	20-AUG-87	NO
4047	TVDS-4	40479401	22-AUG-87	22-AUG-87	NO
4047	TVDS-4	40479401	27-AUG-87	27-AUG-87	NO
4047	TVDS-4	40479401	11-SEP-87	11-SEP-87	NO
4047	TVDS-4	40479401	23-SEP-87	23-SEP-87	NO
4047	TVDS-4	40479401	26-SEP-87	26-SEP-87	NO
4047	TVDS-4	40479401	19-OCT-87	19-OCT-87	NO
4047	TVDS-4	40479401	21-OCT-87	21-OCT-87	NO
4047	TVDS-4	40479401	22-OCT-87	22-OCT-87	NO
4047	TVDS-4	40479401	25-OCT-87	25-OCT-87	NO
4047	TVDS-4	40479401	29-OCT-87	29-OCT-87	NO
4047	TVDS-4	40479401	31-OCT-87	31-OCT-87	NO
4047	TVDS-4	40479401	04-NOV-87	04-NOV-87	NO
4047	TVDS-4	40479401	05-NOV-87	05-NOV-87	NO
4047	TVDS-4	40479401	10-NOV-87	10-NOV-87	NO
4047	TVDS-4	40479401	30-NOV-87	30-NOV-87	NO
4047	TVDS-4	40479401	01-DEC-87	01-DEC-87	NO
4047	TVDS-4	40479401	04-DEC-87	04-DEC-87	NO
4047	TVDS-4	40479401	07-DEC-87	07-DEC-87	NO
4047	TVDS-4	40479401	15-DEC-87	15-DEC-87	NO
4047	TVDS-4	40479401	20-DEC-87	20-DEC-87	NO

-- SITE INFORMATION --

Site Number: 27

Current Site Name: FLAGSTAFF

Other Site Name:

Location: FLAGSTAFF, AZ

Geographic Region: NORTH AMERICA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION.

Site Description: THE SITE IS LOCATED AT THE NORTH EDGE OF FLAGSTAFF, ARIZONA, ON THE GROUNDS OF THE UNITED STATES GEOLOGICAL SURVEY. THE SITE IS EQUIPPED WITH TWO MONUMENTS SET IN AN ASPHALT PARKING LOT. ONE MONUMENT IS COMPATIBLE FOR OCCUPATION BY MOBILE VLBI SYSTEMS. BECAUSE OF ITS PROXIMITY TO A BUILDING, THE SECOND MONUMENT IS COMPATIBLE FOR OCCUPATION BY TLRS-1 ONLY.

Site Topo Map: FLAGSTAFF WEST, ARIZONA. N3507.5-W11137.5/7.5,
U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: COLORADO PLATEAU

Local Geology: VOLCANIC FLOWS AND TUFF

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 27
 Current Site Name: FLAGSTAFF
 Location: FLAGSTAFF, AZ
 Number of Observing Monuments: 2
 Surveyed into National Network? NO

Monument Number: 7261
 Type of Monument: NGS STATION DISK
 Monument Inscription: FLAGSTAFF NCMN 1981
 Systems Using Monument: TLRS AND MOBILE VLBI

Latitude: N 35 12' 52.84462''
 Longitude: W 111 38' 02.45105''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 2167.312 meters
 Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/05-SEP-86
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THE MONUMENT IS LOCATED IN THE CENTER OF THE U.S.G.S.
 PARKING LOT.

Differential Coordinates FROM Observing Monument 7261 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-05

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	FLAGSTAFF NCMN 1	19.870	-7.507	1.225
--	FLAGSTAFF NCMN 2	-24.366	-5.510	-22.109
--	FLAGSTAFF NCMN 3	-16.519	21.867	19.030
7891	FLAGSTAFF RMT NO. 4 1981	15.933	-17.213	-14.367

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	FLAGSTAFF NCMN 1	1.201	21.238	0.422
--	FLAGSTAFF NCMN 2	-26.196	-20.618	-1.225
--	FLAGSTAFF NCMN 3	23.757	-23.417	-0.657
7891	FLAGSTAFF RMT NO. 4 1981	-17.577	21.157	-0.012

-- MONUMENT INFORMATION --

(Continued)

Site Number: 27
Current Site Name: FLAGSTAFF
Location: FLAGSTAFF, AZ

Monument Number: 7891
Type of Monument: NGS STATION DISK
Monument Inscription: FLAGSTAFF RMT NO. 4 1981
Systems Using Monument: TLRS

Latitude: N 35 12' 52.27444''
Longitude: W 111 38' 01.61482''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 2167.301 meters
Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/05-SEP-86
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THE MONUMENT IS ADJACENT TO A BUILDING AND NOT SUITABLE FOR
MOBILE VLBI SYSTEMS. THE DISK REPLACES THE NAIL IN THE PAVEMENT.

Differential Coordinates FROM Observing Monument 7891 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-05

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	FLAGSTAFF NCMN 1	3.937	9.706	15.592
--	FLAGSTAFF NCMN 2	-40.299	11.703	-7.741
--	FLAGSTAFF NCMN 3	-32.453	39.080	33.397
7261	FLAGSTAFF NCMN 1981	-15.933	17.213	14.367

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	FLAGSTAFF NCMN 1	18.779	0.081	0.434
--	FLAGSTAFF NCMN 2	-8.619	-41.775	-1.213
--	FLAGSTAFF NCMN 3	41.334	-44.574	-0.646
7261	FLAGSTAFF NCMN 1981	17.577	-21.157	0.011

-- SITE SKETCH --

Site Number: 27
Current Site Name: FLAGSTAFF
Location: FLAGSTAFF, AZ

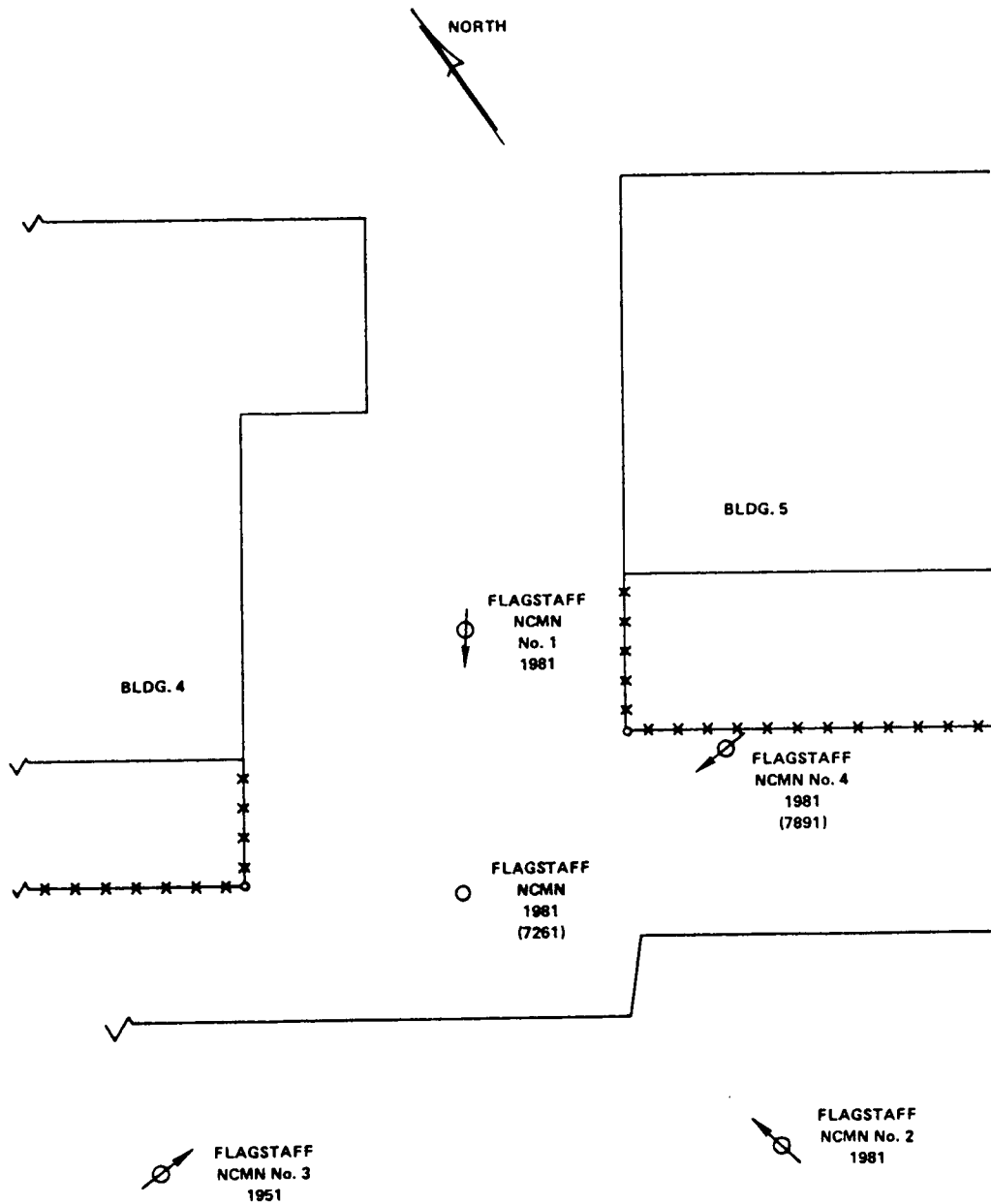


Figure 4-FLGSTF. FLAGSTAFF Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 27
Current Site Name: FLAGSTAFF
Location: FLAGSTAFF, AZ

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7891	TLRS-1	78911101	20-JUN-81	06-AUG-81	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7261	MV-3	72615301	17-APR-84	18-APR-84	YES
7261	MV-3	72615302	02-MAY-85	03-MAY-85	YES
7261	MV-2	72615203	26-MAR-86	27-MAR-86	YES
7261	MV-2	72615204	06-MAY-87	07-MAY-87	NO

-- SITE INFORMATION --

Site Number: 33

Current Site Name: FORT DAVIS
Other Site Name: GEORGE R. AGASSIZ STATION
Location: FORT DAVIS, TX
Geographic Region: NORTH AMERICA
Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, PLATE STABILITY, POLAR MOTION/EARTH ROTATION, REGIONAL DEFORMATION, AND INTERCOMPARISON OF MEASUREMENT TECHNIQUES.

Site Description: THE SITE IS LOCATED AT THE GEORGE R. AGASSIZ STATION (GRAS) IN THE VALLEY BELOW MOUNT LOCKE. A FIXED 26-METER POLARIS ANTENNA (HRAS 085) IS USED FOR VLBI MEASUREMENTS. THE GEODETIC TIE BETWEEN FORT DAVIS (GRAS) AND THE MCDONALD OBSERVATORY IS ACCURATE ENOUGH TO USE THESE TWO SITES IN INTERCOMPARISON EXPERIMENTS.

Site Topo Map: MOUNT LOCKE, TEXAS; CASKAT MOUNTAIN, TEXAS. 7.5, U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: ROCKY MOUNTAIN PROVINCE

Local Geology: TERTIARY IGNEOUS ROCKS ARE PREDOMINANTLY FOUND ON THE SURFACE. THE INFLUENCE OF TOPOGRAPHY ON SOIL FORMATION IS PRONOUNCED. DUE TO EXTENSIVE EROSION, THE SOILS OF HILLS AND MOUNTAINS ARE SHALLOW, WHEREAS THE SOILS OF VALLEYS AND PLAINS ARE DEEP.

Comments: PLEASE REFER TO THE MCDONALD SITE FOR FURTHER INFORMATION ON MONUMENTATION.

-- MONUMENT INFORMATION --

Site Number: 33
 Current Site Name: FORT DAVIS
 Location: FORT DAVIS, TX
 Number of Observing Monuments: 1
 Surveyed into National Network? YES

Monument Number: 7216
 Type of Monument: INTERSECTION OF POLAR AXIS AND PLANE
 CONTAINING DECLINATION AXIS.
 Monument Inscription: NONE
 Systems Using Monument: 85-FOOT FIXED VLBI ANTENNA

Latitude: N 30 38' 11.64006''
 Longitude: W 103 56' 48.44700''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 1619.766 meters
 Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT 83-12-22/09-SEP-85
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THE ANTENNA IS ALSO REFERENCED AS HRAS 085. FOR MONUMENTS
 LISTED BELOW SEE MCDONALD SITE.

Differential Coordinates FROM Observing Monument 7216 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 83-12-23

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	HARVARD 1977	-9.516	-5.257	-39.037
--	HARVARD RM 3 1979	7.470	-45.395	-93.374
--	HARVARD RM 4 1980	19.124	-36.694	-75.024
--	HARVARD RM 5 1980	-16.972	-39.906	-95.339
--	HARVARD RM 6 1980	-7.144	-28.832	-74.138
--	MLRS MIRROR NO. 6 (CENTER)	-5910.063	3490.901	4028.304
--	MOBLAS EAST 1979	-5905.153	3491.522	4027.827
7086	MOBLAS 1979	-5914.416	3496.550	4031.858
7206	----	-6570.392	3267.606	3579.290
7897	TLRS 7897	-6589.769	3298.479	3585.883

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	HARVARD 1977	-37.357	-7.968	-13.530
--	HARVARD RM 4 1980	-80.350	27.405	-11.556
--	HARVARD RM 6 1980	-78.927	0.017	-12.222

-- SITE SKETCH --

Site Number: 33
Current Site Name: FORT DAVIS
Location: FORT DAVIS, TX

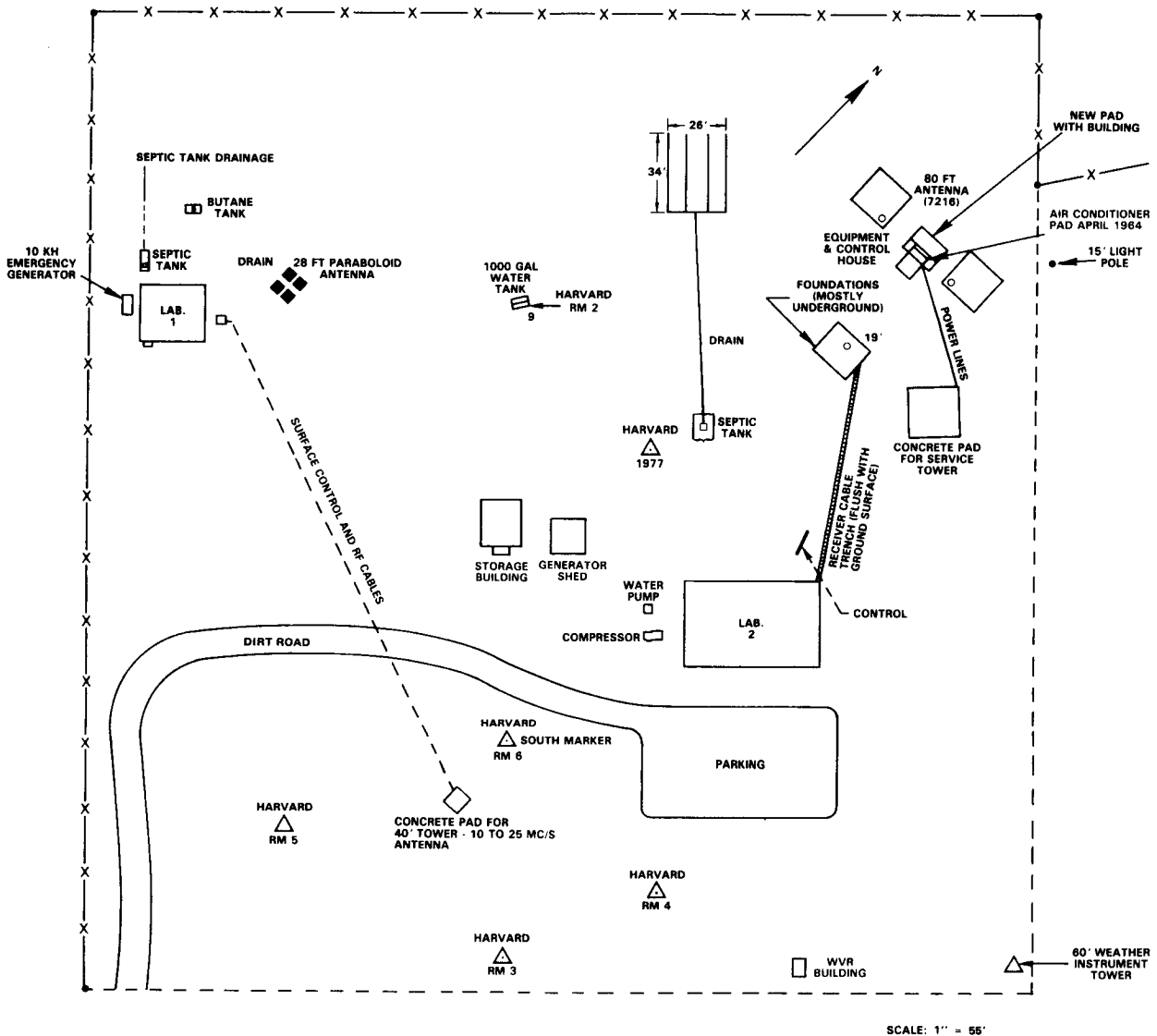


Figure 4-FT DAV. FORT DAVIS Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 33
Current Site Name: FORT DAVIS
Location: FORT DAVIS, TX

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7216	HRAS 085	72167201	11-APR-80	11-APR-80	YES
7216	HRAS 085	72167201	26-JUL-80	26-JUL-80	YES
7216	HRAS 085	72167201	27-JUL-80	27-JUL-80	YES
7216	HRAS 085	72167201	26-SEP-80	26-SEP-80	YES
7216	HRAS 085	72167201	27-SEP-80	27-SEP-80	YES
7216	HRAS 085	72167201	28-SEP-80	28-SEP-80	YES
7216	HRAS 085	72167201	29-SEP-80	29-SEP-80	YES
7216	HRAS 085	72167201	30-SEP-80	30-SEP-80	YES
7216	HRAS 085	72167201	01-OCT-80	01-OCT-80	YES
7216	HRAS 085	72167201	02-OCT-80	02-OCT-80	YES
7216	HRAS 085	72167201	16-OCT-80	16-OCT-80	YES
7216	HRAS 085	72167201	17-OCT-80	17-OCT-80	YES
7216	HRAS 085	72167201	18-OCT-80	18-OCT-80	YES
7216	HRAS 085	72167201	19-OCT-80	19-OCT-80	YES
7216	HRAS 085	72167201	20-OCT-80	20-OCT-80	YES
7216	HRAS 085	72167201	21-OCT-80	21-OCT-80	YES
7216	HRAS 085	72167201	22-OCT-80	22-OCT-80	YES
7216	HRAS 085	72167201	03-NOV-80	03-NOV-80	YES
7216	HRAS 085	72167201	01-DEC-80	01-DEC-80	YES
7216	HRAS 085	72167201	19-DEC-80	19-DEC-80	YES
7216	HRAS 085	72167201	07-JAN-81	07-JAN-81	YES
7216	HRAS 085	72167201	22-JAN-81	22-JAN-81	YES
7216	HRAS 085	72167201	12-FEB-81	12-FEB-81	YES
7216	HRAS 085	72167201	27-FEB-81	27-FEB-81	YES
7216	HRAS 085	72167201	16-MAR-81	16-MAR-81	YES
7216	HRAS 085	72167201	11-MAY-81	11-MAY-81	YES
7216	HRAS 085	72167201	13-MAY-81	13-MAY-81	YES
7216	HRAS 085	72167201	14-MAY-81	14-MAY-81	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 33A
Current Site Name: FORT DAVIS
Location: FORT DAVIS, TX

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7216	HRAS 085	72167201	16-MAY-81	16-MAY-81	YES
7216	HRAS 085	72167201	16-JUN-81	16-JUN-81	YES
7216	HRAS 085	72167201	17-JUN-81	17-JUN-81	YES
7216	HRAS 085	72167201	24-JUN-81	24-JUN-81	YES
7216	HRAS 085	72167201	01-JUL-81	01-JUL-81	YES
7216	HRAS 085	72167201	08-JUL-81	08-JUL-81	YES
7216	HRAS 085	72167201	15-JUL-81	15-JUL-81	YES
7216	HRAS 085	72167201	22-JUL-81	22-JUL-81	YES
7216	HRAS 085	72167201	29-JUL-81	29-JUL-81	YES
7216	HRAS 085	72167201	05-AUG-81	05-AUG-81	YES
7216	HRAS 085	72167201	24-AUG-81	24-AUG-81	YES
7216	HRAS 085	72167201	26-AUG-81	26-AUG-81	YES
7216	HRAS 085	72167201	28-AUG-81	28-AUG-81	YES
7216	HRAS 085	72167201	30-AUG-81	30-AUG-81	YES
7216	HRAS 085	72167201	31-AUG-81	31-AUG-81	YES
7216	HRAS 085	72167201	02-SEP-81	02-SEP-81	YES
7216	HRAS 085	72167201	09-SEP-81	09-SEP-81	YES
7216	HRAS 085	72167201	16-SEP-81	16-SEP-81	YES
7216	HRAS 085	72167201	23-SEP-81	23-SEP-81	YES
7216	HRAS 085	72167201	30-SEP-81	30-SEP-81	YES
7216	HRAS 085	72167201	15-OCT-81	15-OCT-81	YES
7216	HRAS 085	72167201	21-OCT-81	21-OCT-81	YES
7216	HRAS 085	72167201	28-OCT-81	28-OCT-81	YES
7216	HRAS 085	72167201	04-NOV-81	04-NOV-81	YES
7216	HRAS 085	72167201	10-NOV-81	10-NOV-81	YES
7216	HRAS 085	72167201	18-NOV-81	18-NOV-81	YES
7216	HRAS 085	72167201	19-NOV-81	19-NOV-81	YES
7216	HRAS 085	72167201	24-NOV-81	24-NOV-81	YES
7216	HRAS 085	72167201	02-DEC-81	02-DEC-81	YES
7216	HRAS 085	72167201	12-DEC-81	12-DEC-81	YES
7216	HRAS 085	72167201	16-DEC-81	16-DEC-81	YES
7216	HRAS 085	72167201	22-DEC-81	22-DEC-81	YES
7216	HRAS 085	72167201	06-JAN-82	06-JAN-82	YES
7216	HRAS 085	72167201	13-JAN-82	13-JAN-82	YES
7216	HRAS 085	72167201	20-JAN-82	20-JAN-82	YES
7216	HRAS 085	72167201	27-JAN-82	27-JAN-82	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 33A
Current Site Name: FORT DAVIS
Location: FORT DAVIS, TX

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7216	HRAS 085	72167201	01-FEB-82	01-FEB-82	YES
7216	HRAS 085	72167201	10-FEB-82	10-FEB-82	YES
7216	HRAS 085	72167201	17-FEB-82	17-FEB-82	YES
7216	HRAS 085	72167201	24-FEB-82	24-FEB-82	YES
7216	HRAS 085	72167201	03-MAR-82	03-MAR-82	YES
7216	HRAS 085	72167201	10-MAR-82	10-MAR-82	YES
7216	HRAS 085	72167201	24-MAR-82	24-MAR-82	YES
7216	HRAS 085	72167201	29-MAR-82	29-MAR-82	YES
7216	HRAS 085	72167201	07-APR-82	07-APR-82	YES
7216	HRAS 085	72167201	13-APR-82	13-APR-82	YES
7216	HRAS 085	72167201	26-APR-82	26-APR-82	YES
7216	HRAS 085	72167201	03-MAY-82	03-MAY-82	YES
7216	HRAS 085	72167201	10-MAY-82	10-MAY-82	YES
7216	HRAS 085	72167201	17-MAY-82	17-MAY-82	YES
7216	HRAS 085	72167201	02-JUN-82	02-JUN-82	YES
7216	HRAS 085	72167201	07-JUN-82	07-JUN-82	YES
7216	HRAS 085	72167201	20-JUN-82	20-JUN-82	YES
7216	HRAS 085	72167201	21-JUN-82	21-JUN-82	YES
7216	HRAS 085	72167201	28-JUN-82	28-JUN-82	YES
7216	HRAS 085	72167201	12-JUL-82	12-JUL-82	YES
7216	HRAS 085	72167201	19-JUL-82	19-JUL-82	YES
7216	HRAS 085	72167201	26-JUL-82	26-JUL-82	YES
7216	HRAS 085	72167201	04-AUG-82	04-AUG-82	YES
7216	HRAS 085	72167201	09-AUG-82	09-AUG-82	YES
7216	HRAS 085	72167201	16-AUG-82	16-AUG-82	YES
7216	HRAS 085	72167201	23-AUG-82	23-AUG-82	YES
7216	HRAS 085	72167201	30-AUG-82	30-AUG-82	YES
7216	HRAS 085	72167201	07-SEP-82	07-SEP-82	YES
7216	HRAS 085	72167201	13-SEP-82	13-SEP-82	YES
7216	HRAS 085	72167201	20-SEP-82	20-SEP-82	YES
7216	HRAS 085	72167201	27-SEP-82	27-SEP-82	YES
7216	HRAS 085	72167201	04-OCT-82	04-OCT-82	YES
7216	HRAS 085	72167201	13-OCT-82	13-OCT-82	YES
7216	HRAS 085	72167201	16-OCT-82	16-OCT-82	YES
7216	HRAS 085	72167201	17-OCT-82	17-OCT-82	YES
7216	HRAS 085	72167201	18-OCT-82	18-OCT-82	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 33A
Current Site Name: FORT DAVIS
Location: FORT DAVIS, TX

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7216	HRAS 085	72167201	22-OCT-82	22-OCT-82	YES
7216	HRAS 085	72167201	24-OCT-82	24-OCT-82	YES
7216	HRAS 085	72167201	25-OCT-82	25-OCT-82	YES
7216	HRAS 085	72167201	01-NOV-82	01-NOV-82	YES
7216	HRAS 085	72167201	08-NOV-82	08-NOV-82	YES
7216	HRAS 085	72167201	15-NOV-82	15-NOV-82	YES
7216	HRAS 085	72167201	22-NOV-82	22-NOV-82	YES
7216	HRAS 085	72167201	29-NOV-82	29-NOV-82	YES
7216	HRAS 085	72167201	06-DEC-82	06-DEC-82	YES
7216	HRAS 085	72167201	15-DEC-82	15-DEC-82	YES
7216	HRAS 085	72167201	16-DEC-82	16-DEC-82	YES
7216	HRAS 085	72167201	20-DEC-82	20-DEC-82	YES
7216	HRAS 085	72167201	27-DEC-82	27-DEC-82	YES
7216	HRAS 085	72167201	03-JAN-83	03-JAN-83	YES
7216	HRAS 085	72167201	10-JAN-83	10-JAN-83	YES
7216	HRAS 085	72167201	17-JAN-83	17-JAN-83	YES
7216	HRAS 085	72167201	24-JAN-83	24-JAN-83	YES
7216	HRAS 085	72167201	31-JAN-83	31-JAN-83	YES
7216	HRAS 085	72167201	07-FEB-83	07-FEB-83	YES
7216	HRAS 085	72167201	14-FEB-83	14-FEB-83	YES
7216	HRAS 085	72167201	24-FEB-83	24-FEB-83	YES
7216	HRAS 085	72167201	28-FEB-83	28-FEB-83	YES
7216	HRAS 085	72167201	07-MAR-83	07-MAR-83	YES
7216	HRAS 085	72167201	14-MAR-83	14-MAR-83	YES
7216	HRAS 085	72167201	21-MAR-83	21-MAR-83	YES
7216	HRAS 085	72167201	28-MAR-83	28-MAR-83	YES
7216	HRAS 085	72167201	04-APR-83	04-APR-83	YES
7216	HRAS 085	72167201	11-APR-83	11-APR-83	YES
7216	HRAS 085	72167201	25-APR-83	25-APR-83	YES
7216	HRAS 085	72167201	02-MAY-83	02-MAY-83	YES
7216	HRAS 085	72167201	05-MAY-83	05-MAY-83	YES
7216	HRAS 085	72167201	09-MAY-83	09-MAY-83	YES
7216	HRAS 085	72167201	16-MAY-83	16-MAY-83	YES
7216	HRAS 085	72167201	23-MAY-83	23-MAY-83	YES
7216	HRAS 085	72167201	31-MAY-83	31-MAY-83	YES
7216	HRAS 085	72167201	06-JUN-83	06-JUN-83	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 33A
Current Site Name: FORT DAVIS
Location: FORT DAVIS, TX

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7216	HRAS 085	72167201	07-JUN-83	07-JUN-83	YES
7216	HRAS 085	72167201	08-JUN-83	08-JUN-83	YES
7216	HRAS 085	72167201	09-JUN-83	09-JUN-83	YES
7216	HRAS 085	72167201	10-JUN-83	10-JUN-83	YES
7216	HRAS 085	72167201	13-JUN-83	13-JUN-83	YES
7216	HRAS 085	72167201	20-JUN-83	20-JUN-83	YES
7216	HRAS 085	72167201	27-JUN-83	27-JUN-83	YES
7216	HRAS 085	72167201	28-JUN-83	28-JUN-83	YES
7216	HRAS 085	72167201	29-JUN-83	29-JUN-83	YES
7216	HRAS 085	72167201	05-JUL-83	05-JUL-83	YES
7216	HRAS 085	72167201	11-JUL-83	11-JUL-83	YES
7216	HRAS 085	72167201	25-JUL-83	25-JUL-83	YES
7216	HRAS 085	72167201	01-AUG-83	01-AUG-83	YES
7216	HRAS 085	72167201	08-AUG-83	08-AUG-83	YES
7216	HRAS 085	72167201	15-AUG-83	15-AUG-83	YES
7216	HRAS 085	72167201	22-AUG-83	22-AUG-83	YES
7216	HRAS 085	72167201	23-AUG-83	23-AUG-83	YES
7216	HRAS 085	72167201	29-AUG-83	29-AUG-83	YES
7216	HRAS 085	72167201	02-SEP-83	02-SEP-83	YES
7216	HRAS 085	72167201	07-SEP-83	07-SEP-83	YES
7216	HRAS 085	72167201	12-SEP-83	12-SEP-83	YES
7216	HRAS 085	72167201	17-SEP-83	17-SEP-83	YES
7216	HRAS 085	72167201	22-SEP-83	22-SEP-83	YES
7216	HRAS 085	72167201	27-SEP-83	27-SEP-83	YES
7216	HRAS 085	72167201	02-OCT-83	02-OCT-83	YES
7216	HRAS 085	72167201	07-OCT-83	07-OCT-83	YES
7216	HRAS 085	72167201	12-OCT-83	12-OCT-83	YES
7216	HRAS 085	72167201	17-OCT-83	17-OCT-83	YES
7216	HRAS 085	72167201	22-OCT-83	22-OCT-83	YES
7216	HRAS 085	72167201	27-OCT-83	27-OCT-83	YES
7216	HRAS 085	72167201	01-NOV-83	01-NOV-83	YES
7216	HRAS 085	72167201	05-NOV-83	05-NOV-83	YES
7216	HRAS 085	72167201	06-NOV-83	06-NOV-83	YES
7216	HRAS 085	72167201	08-NOV-83	08-NOV-83	YES
7216	HRAS 085	72167201	11-NOV-83	11-NOV-83	YES
7216	HRAS 085	72167201	16-NOV-83	16-NOV-83	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 33A
Current Site Name: FORT DAVIS
Location: FORT DAVIS, TX

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7216	HRAS 085	72167201	21-NOV-83	21-NOV-83	YES
7216	HRAS 085	72167201	26-NOV-83	26-NOV-83	YES
7216	HRAS 085	72167201	01-DEC-83	01-DEC-83	YES
7216	HRAS 085	72167201	06-DEC-83	06-DEC-83	YES
7216	HRAS 085	72167201	11-DEC-83	11-DEC-83	YES
7216	HRAS 085	72167201	16-DEC-83	16-DEC-83	YES
7216	HRAS 085	72167201	21-DEC-83	21-DEC-83	YES
7216	HRAS 085	72167201	26-DEC-83	26-DEC-83	YES
7216	HRAS 085	72167201	31-DEC-83	31-DEC-83	YES
7216	HRAS 085	72167201	04-JAN-84	05-JAN-84	YES
7216	HRAS 085	72167201	09-JAN-84	10-JAN-84	YES
7216	HRAS 085	72167201	14-JAN-84	15-JAN-84	YES
7216	HRAS 085	72167201	24-JAN-84	24-JAN-84	YES
7216	HRAS 085	72167201	25-JAN-84	26-JAN-84	YES
7216	HRAS 085	72167201	29-JAN-84	30-JAN-84	YES
7216	HRAS 085	72167201	03-FEB-84	04-FEB-84	YES
7216	HRAS 085	72167201	13-FEB-84	14-FEB-84	YES
7216	HRAS 085	72167201	18-FEB-84	19-FEB-84	YES
7216	HRAS 085	72167201	23-FEB-84	23-FEB-84	YES
7216	HRAS 085	72167201	28-FEB-84	28-FEB-84	YES
7216	HRAS 085	72167201	09-MAR-84	10-MAR-84	YES
7216	HRAS 085	72167201	14-MAR-84	14-MAR-84	YES
7216	HRAS 085	72167201	15-MAR-84	16-MAR-84	YES
7216	HRAS 085	72167201	19-MAR-84	20-MAR-84	YES
7216	HRAS 085	72167201	25-MAR-84	26-MAR-84	YES
7216	HRAS 085	72167201	30-MAR-84	31-MAR-84	YES
7216	HRAS 085	72167201	03-APR-84	04-APR-84	YES
7216	HRAS 085	72167201	08-APR-84	08-APR-84	YES
7216	HRAS 085	72167201	12-APR-84	12-APR-84	YES
7216	HRAS 085	72167201	13-APR-84	14-APR-84	YES
7216	HRAS 085	72167201	17-APR-84	17-APR-84	YES
7216	HRAS 085	72167201	18-APR-84	19-APR-84	YES
7216	HRAS 085	72167201	21-APR-84	22-APR-84	YES
7216	HRAS 085	72167201	23-APR-84	24-APR-84	YES
7216	HRAS 085	72167201	25-APR-84	25-APR-84	YES
7216	HRAS 085	72167201	26-APR-84	27-APR-84	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 33A
Current Site Name: FORT DAVIS
Location: FORT DAVIS, TX

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7216	HRAS 085	72167201	28-APR-84	29-APR-84	YES
7216	HRAS 085	72167201	03-MAY-84	04-MAY-84	YES
7216	HRAS 085	72167201	08-MAY-84	09-MAY-84	YES
7216	HRAS 085	72167201	13-MAY-84	14-MAY-84	YES
7216	HRAS 085	72167201	18-MAY-84	18-MAY-84	YES
7216	HRAS 085	72167201	23-MAY-84	24-MAY-84	YES
7216	HRAS 085	72167201	28-MAY-84	29-MAY-84	YES
7216	HRAS 085	72167201	02-JUN-84	03-JUN-84	YES
7216	HRAS 085	72167201	07-JUN-84	08-JUN-84	YES
7216	HRAS 085	72167201	12-JUN-84	13-JUN-84	YES
7216	HRAS 085	72167201	17-JUN-84	18-JUN-84	YES
7216	HRAS 085	72167201	22-JUN-84	23-JUN-84	YES
7216	HRAS 085	72167201	27-JUN-84	28-JUN-84	YES
7216	HRAS 085	72167201	30-JUN-84	01-JUL-84	YES
7216	HRAS 085	72167201	02-JUL-84	03-JUL-84	YES
7216	HRAS 085	72167201	12-JUL-84	13-JUL-84	YES
7216	HRAS 085	72167201	17-JUL-84	18-JUL-84	YES
7216	HRAS 085	72167201	27-JUL-84	27-JUL-84	YES
7216	HRAS 085	72167201	03-JAN-85	03-JAN-85	YES
7216	HRAS 085	72167201	08-JAN-85	08-JAN-85	YES
7216	HRAS 085	72167201	18-JAN-85	18-JAN-85	YES
7216	HRAS 085	72167201	23-JAN-85	23-JAN-85	YES
7216	HRAS 085	72167201	28-JAN-85	28-JAN-85	YES
7216	HRAS 085	72167201	02-FEB-85	02-FEB-85	YES
7216	HRAS 085	72167201	07-FEB-85	07-FEB-85	YES
7216	HRAS 085	72167201	12-FEB-85	12-FEB-85	YES
7216	HRAS 085	72167201	17-FEB-85	17-FEB-85	YES
7216	HRAS 085	72167201	22-FEB-85	22-FEB-85	YES
7216	HRAS 085	72167201	27-FEB-85	27-FEB-85	YES
7216	HRAS 085	72167201	04-MAR-85	04-MAR-85	YES
7216	HRAS 085	72167201	05-MAR-85	05-MAR-85	YES
7216	HRAS 085	72167201	09-MAR-85	09-MAR-85	YES
7216	HRAS 085	72167201	14-MAR-85	14-MAR-85	YES
7216	HRAS 085	72167201	19-MAR-85	19-MAR-85	YES
7216	HRAS 085	72167201	24-MAR-85	24-MAR-85	YES
7216	HRAS 085	72167201	29-MAR-85	29-MAR-85	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 33A
Current Site Name: FORT DAVIS
Location: FORT DAVIS, TX

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7216	HRAS 085	72167201	03-APR-85	03-APR-85	YES
7216	HRAS 085	72167201	08-APR-85	08-APR-85	YES
7216	HRAS 085	72167201	13-APR-85	13-APR-85	YES
7216	HRAS 085	72167201	18-APR-85	18-APR-85	YES
7216	HRAS 085	72167201	23-APR-85	23-APR-85	YES
7216	HRAS 085	72167201	28-APR-85	28-APR-85	YES
7216	HRAS 085	72167201	03-MAY-85	03-MAY-85	YES
7216	HRAS 085	72167201	07-MAY-85	07-MAY-85	YES
7216	HRAS 085	72167201	08-MAY-85	08-MAY-85	YES
7216	HRAS 085	72167201	09-MAY-85	09-MAY-85	YES
7216	HRAS 085	72167201	13-MAY-85	13-MAY-85	YES
7216	HRAS 085	72167201	18-MAY-85	18-MAY-85	YES
7216	HRAS 085	72167201	23-MAY-85	23-MAY-85	YES
7216	HRAS 085	72167201	28-MAY-85	28-MAY-85	YES
7216	HRAS 085	72167201	02-JUN-85	02-JUN-85	YES
7216	HRAS 085	72167201	07-JUN-85	07-JUN-85	YES
7216	HRAS 085	72167201	17-JUN-85	17-JUN-85	YES
7216	HRAS 085	72167201	22-JUN-85	22-JUN-85	YES
7216	HRAS 085	72167201	27-JUN-85	27-JUN-85	YES
7216	HRAS 085	72167201	02-JUL-85	02-JUL-85	YES
7216	HRAS 085	72167201	07-JUL-85	07-JUL-85	YES
7216	HRAS 085	72167201	12-JUL-85	12-JUL-85	YES
7216	HRAS 085	72167201	17-JUL-85	17-JUL-85	YES
7216	HRAS 085	72167201	22-JUL-85	22-JUL-85	YES
7216	HRAS 085	72167201	27-JUL-85	27-JUL-85	YES
7216	HRAS 085	72167201	01-AUG-85	01-AUG-85	YES
7216	HRAS 085	72167201	06-AUG-85	06-AUG-85	YES
7216	HRAS 085	72167201	11-AUG-85	11-AUG-85	YES
7216	HRAS 085	72167201	16-AUG-85	16-AUG-85	YES
7216	HRAS 085	72167201	21-AUG-85	21-AUG-85	YES
7216	HRAS 085	72167201	24-AUG-85	24-AUG-85	YES
7216	HRAS 085	72167201	26-AUG-85	26-AUG-85	YES
7216	HRAS 085	72167201	28-AUG-85	28-AUG-85	YES
7216	HRAS 085	72167201	31-AUG-85	31-AUG-85	YES
7216	HRAS 085	72167201	04-SEP-85	04-SEP-85	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 33A
Current Site Name: FORT DAVIS
Location: FORT DAVIS, TX

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7216	HRAS 085	72167201	05-SEP-85	05-SEP-85	YES
7216	HRAS 085	72167201	10-SEP-85	10-SEP-85	YES
7216	HRAS 085	72167201	15-SEP-85	15-SEP-85	YES
7216	HRAS 085	72167201	20-SEP-85	20-SEP-85	YES
7216	HRAS 085	72167201	25-SEP-85	25-SEP-85	YES
7216	HRAS 085	72167201	30-SEP-85	30-SEP-85	YES
7216	HRAS 085	72167201	05-OCT-85	05-OCT-85	YES
7216	HRAS 085	72167201	10-OCT-85	10-OCT-85	YES
7216	HRAS 085	72167201	15-OCT-85	15-OCT-85	YES
7216	HRAS 085	72167201	20-OCT-85	20-OCT-85	YES
7216	HRAS 085	72167201	25-OCT-85	25-OCT-85	YES
7216	HRAS 085	72167201	29-OCT-85	29-OCT-85	YES
7216	HRAS 085	72167201	30-OCT-85	30-OCT-85	YES
7216	HRAS 085	72167201	04-NOV-85	04-NOV-85	YES
7216	HRAS 085	72167201	09-NOV-85	09-NOV-85	YES
7216	HRAS 085	72167201	14-NOV-85	14-NOV-85	YES
7216	HRAS 085	72167201	19-NOV-85	19-NOV-85	YES
7216	HRAS 085	72167201	24-NOV-85	24-NOV-85	YES
7216	HRAS 085	72167201	29-NOV-85	29-NOV-85	YES
7216	HRAS 085	72167201	04-DEC-85	04-DEC-85	YES
7216	HRAS 085	72167201	09-DEC-85	09-DEC-85	YES
7216	HRAS 085	72167201	14-DEC-85	14-DEC-85	YES
7216	HRAS 085	72167201	19-DEC-85	19-DEC-85	YES
7216	HRAS 085	72167201	29-DEC-85	29-DEC-85	YES
7216	HRAS 085	72167201	05-JAN-86	05-JAN-86	YES
7216	HRAS 085	72167201	23-FEB-86	23-FEB-86	YES
7216	HRAS 085	72167201	26-MAR-86	26-MAR-86	YES
7216	HRAS 085	72167201	30-MAR-86	30-MAR-86	YES
7216	HRAS 085	72167201	01-APR-86	01-APR-86	YES
7216	HRAS 085	72167201	02-APR-86	02-APR-86	YES
7216	HRAS 085	72167201	04-APR-86	04-APR-86	YES
7216	HRAS 085	72167201	07-APR-86	07-APR-86	YES
7216	HRAS 085	72167201	10-APR-86	10-APR-86	YES
7216	HRAS 085	72167201	14-MAY-86	14-OCT-86	YES
7216	HRAS 085	72167201	18-MAY-86	18-OCT-86	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 33A
Current Site Name: FORT DAVIS
Location: FORT DAVIS, TX

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7216	HRAS 085	72167201	21-MAY-86	21-OCT-86	YES
7216	HRAS 085	72167201	16-JUL-86	16-OCT-86	YES
7216	HRAS 085	72167201	17-SEP-86	17-OCT-86	YES
7216	HRAS 085	72167201	16-OCT-86	16-OCT-86	YES
7216	HRAS 085	72167201	19-OCT-86	19-OCT-86	YES
7216	HRAS 085	72167201	26-OCT-86	26-OCT-86	YES
7216	HRAS 085	72167201	29-OCT-86	29-OCT-86	YES
7216	HRAS 085	72167201	31-OCT-86	31-OCT-86	YES
7216	HRAS 085	72167201	01-NOV-86	01-NOV-86	YES
7216	HRAS 085	72167201	10-DEC-86	10-DEC-86	YES
7216	HRAS 085	72167201	13-DEC-86	13-DEC-86	YES
7216	HRAS 085	72167201	14-JAN-87	14-JAN-87	NO
7216	HRAS 085	72167201	06-FEB-87	06-FEB-87	NO
7216	HRAS 085	72167201	09-FEB-87	09-FEB-87	NO
7216	HRAS 085	72167201	22-MAR-87	22-MAR-87	NO
7216	HRAS 085	72167201	26-MAR-87	26-MAR-87	NO
7216	HRAS 085	72167201	09-APR-87	09-APR-87	NO
7216	HRAS 085	72167201	14-APR-87	14-APR-87	NO
7216	HRAS 085	72167201	01-MAY-87	01-MAY-87	NO
7216	HRAS 085	72167201	04-MAY-87	04-MAY-87	NO
7216	HRAS 085	72167201	06-MAY-87	06-MAY-87	NO
7216	HRAS 085	72167201	10-MAY-87	10-MAY-87	NO
7216	HRAS 085	72167201	14-MAY-87	14-MAY-87	NO
7216	HRAS 085	72167201	24-MAY-87	24-MAY-87	NO
7216	HRAS 085	72167201	29-MAY-87	29-MAY-87	NO
7216	HRAS 085	72167201	18-JUN-87	18-JUN-87	NO
7216	HRAS 085	72167201	28-JUN-87	28-JUN-87	NO
7216	HRAS 085	72167201	08-JUL-87	08-JUL-87	NO
7216	HRAS 085	72167201	11-JUL-87	11-JUL-87	NO
7216	HRAS 085	72167201	18-JUL-87	18-JUL-87	NO
7216	HRAS 085	72167201	21-JUL-87	21-JUL-87	NO
7216	HRAS 085	72167201	19-AUG-87	19-AUG-87	NO
7216	HRAS 085	72167201	22-AUG-87	22-AUG-87	NO
7216	HRAS 085	72167201	24-AUG-87	24-AUG-87	NO
7216	HRAS 085	72167201	27-AUG-87	27-AUG-87	NO

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 33A
Current Site Name: FORT DAVIS
Location: FORT DAVIS, TX

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7216	HRAS 085	72167201	11-SEP-87	11-SEP-87	NO
7216	HRAS 085	72167201	26-SEP-87	26-SEP-87	NO
7216	HRAS 085	72167201	16-OCT-87	16-OCT-87	NO
7216	HRAS 085	72167201	18-OCT-87	18-OCT-87	NO
7216	HRAS 085	72167201	21-OCT-87	21-OCT-87	NO
7216	HRAS 085	72167201	22-OCT-87	22-OCT-87	NO
7216	HRAS 085	72167201	28-OCT-87	28-OCT-87	NO
7216	HRAS 085	72167201	31-OCT-87	31-OCT-87	NO
7216	HRAS 085	72167201	10-NOV-87	10-NOV-87	NO
7216	HRAS 085	72167201	30-NOV-87	30-NOV-87	NO
7216	HRAS 085	72167201	05-DEC-87	05-DEC-87	NO
7216	HRAS 085	72167201	15-DEC-87	15-DEC-87	NO
7216	HRAS 085	72167201	30-DEC-87	30-DEC-87	NO

-- SITE INFORMATION --

Site Number: 12

Current Site Name: FORT ORD
Other Site Name: ANDERSON PEAK
Location: FORT ORD, CA
Geographic Region: CALIFORNIA
Tectonic Plate: PACIFIC

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION.

Site Description: THE STATION IS LOCATED ON THE U.S. MILITARY RESERVATION, FORT ORD, CALIFORNIA. THE SITE IS EQUIPPED WITH A 16' X 16' MONUMENTED PAD WITH THREE PEDESTAL PADS ORIGINALLY DESIGNED FOR OCCUPATION BY THE MV-1 SYSTEM. THIS PAD IS NOW COMPATIBLE FOR OCCUPATION BY ANY MOBILE VLBI SYSTEM.

Site Topo Map: MARINA, CALIFORNIA. N3637.5-W12145/7.5, 1947. U.S. DEPARTMENT OF THE ARMY CORPS OF ENGINEERS. AVAILABLE THRU U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: SOUTHERN COAST RANGES, APPROXIMATELY 25 MILES WEST OF THE SAN ANDREAS FAULT.

Local Geology: QUATERNARY STREAM CHANNEL DEPOSITS

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 12
 Current Site Name: FORT ORD
 Location: FORT ORD, CA
 Number of Observing Monuments: 1
 Surveyed into National Network? YES

Monument Number: 7266
 Type of Monument: NGS STATION DISK
 Monument Inscription: FORT ORD NCMN 1981
 Systems Using Monument: MOBILE VLBI

Latitude: N 36 40' 11.35300''
 Longitude: W 121 46' 19.90898''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 24.48 meters
 Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/03-SEP-86
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7266 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-03

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	BM TRI ORD USE	12.809	11.873	23.466
--	FORT ORD NCMN AZ. MK.	1382.866	-866.359	-33.097
--	FORT ORD NCMN NO.1 1981	41.976	-1.520	27.070
--	FORT ORD NCMN NO.2 1981	-9.273	-16.775	-25.467
--	FORT ORD NCMN NO.3 1981	-22.279	37.017	25.067
--	FREMONT PEAK 2 1930	23132.335	-8297.390	8321.233
--	FREMONT PEAK 2 1930 AZ MK	23574.172	-8226.970	8515.722
--	MULLIGAN 1932	833.366	5703.821	7029.944

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	BM TRI ORD USE	28.878	4.637	0.508
--	FORT ORD NCMN NO.1 1981	34.142	36.485	-0.528
--	FORT ORD NCMN NO.2 1981	-31.860	0.951	0.146
--	FORT ORD NCMN NO.3 1981	31.893	-38.433	-0.860

-- SITE SKETCH --

Site Number: 12
Current Site Name: FORT ORD
Location: FORT ORD, CA

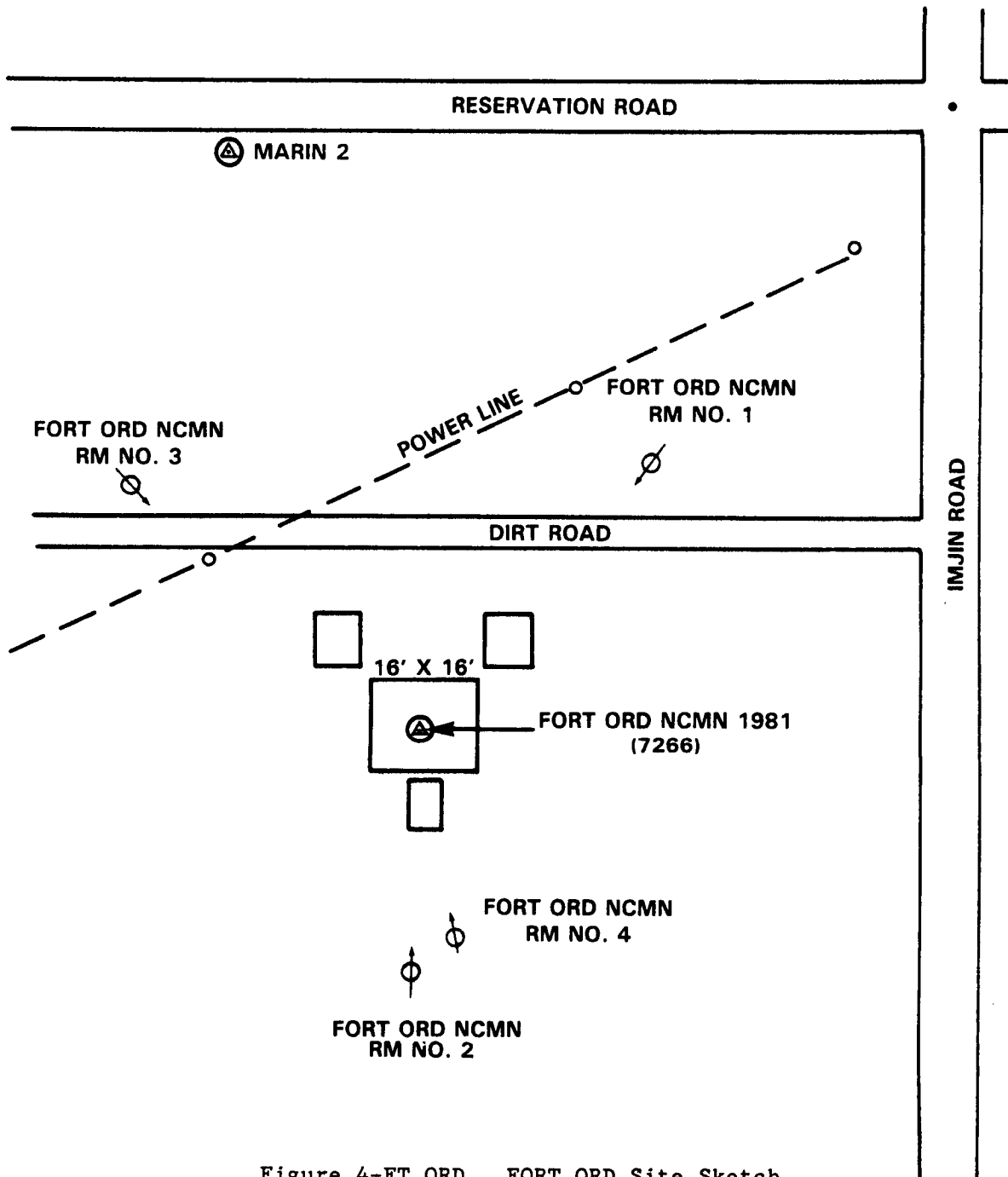


Figure 4-FT ORD. FORT ORD Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 12
Current Site Name: FORT ORD
Location: FORT ORD, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
--------------------	---------------------	--------------------------	------------------	----------------	-----------------

-- No Previous Occupations --

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7266	MV-2	72665201	17-DEC-81	18-DEC-81	YES
7266	MV-3	72665302	25-AUG-83	26-AUG-83	YES
7266	MV-3	72665303	23-FEB-84	24-FEB-84	YES
7266	MV-3	72665304	10-MAR-85	11-MAR-85	YES
7266	MV-2	72665205	22-OCT-85	25-OCT-85	YES
7266	MV-2	72665206	08-FEB-87	10-FEB-87	NO
7266	MV-2	72665207	20-MAY-87	21-MAY-87	NO
7266	MV-3	72665308	18-OCT-87	19-OCT-87	NO

-- SITE INFORMATION --

Site Number: 8C

Current Site Name: GOLDSTONE MARS
Other Site Name: GOLDSTONE
Location: GOLDSTONE, CA
Geographic Region: CALIFORNIA
Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, PLATE STABILITY, POLAR MOTION/EARTH ROTATION, REGIONAL DEFORMATION, AND INTERCOMPARISON OF MEASUREMENT TECHNIQUES.

Site Description: THE SITE IS PART OF AN EXISTING NASA COMPLEX LOCATED NEAR FORT IRWIN WITHIN THE BOUNDARIES OF THE CAMP IRWIN MILITARY RESERVATION. THE SITE CONSISTS OF THE 64-FOOT MARS ANTENNA AND A LARGE MOBLAS PAD. THE SITE HAS BEEN ABANDONED DUE TO THE TRACKING OBLIGATIONS OF THE ANTENNA. THE MOJAVE ANTENNA HAS BEEN CHOSEN TO REPLACE THE ANTENNAS AT THE GOLDSTONE COMPLEX FOR ALL CDP VLBI MEASUREMENTS.

Site Topo Map: GOLDSTONE LAKE, CALIFORNIA. N3515-W11645/15, 1948, CORPS OF ENGINEERS, U.S. ARMY. AVAILABLE THROUGH THE U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: MOJAVE DESERT REGION

Local Geology: QUATERNARY ALLUVIUM LOCALLY. EAST OF THE SAN ANDREAS FAULT.

Comments: PLEASE REFER TO MOJAVE SITE FOR FURTHER INFORMATION ON MONUMENTATION.

-- MONUMENT INFORMATION --

Site Number: 8C
 Current Site Name: GOLDSTONE MARS
 Location: GOLDSTONE, CA
 Number of Observing Monuments: 2
 Surveyed into National Network? YES

Monument Number: 1514
 Type of Monument: INTERSECTION OF THE LOCAL ZENITH (Z)
 AND X AXIS
 Monument Inscription: NONE
 Systems Using Monument: 64-METER FIXED VLBI ANTENNA

Latitude: N 35 25' 33.36612''
 Longitude: W 116 53' 19.35204''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 1012.620 meters
 Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/13-JAN-87
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: ALSO REFERENCED AS DSS-14 AND MARS.

Differential Coordinates FROM Observing Monument 1514 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 87-01-13

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	101 ARIES #2 4-17-78	224.245	-167.412	-126.979
--	ARIES RM-1 1976 (DOPPLER 51201)	230.026	-168.704	-124.935
--	ARIES RM-2 1976 (DOPPLER 51228)	222.324	-170.193	-131.692
--	GOLDSTONE VAL RM 2	205.240	-213.430	-204.177
--	GOLDSTONE VAL RM 3	193.014	-147.955	-122.263
--	GOLDSTONE VAL RM1 (DOPPLER 51212)	283.300	-201.693	-133.590
7085	MOBLAS 7085 GOLDSTONE VAL	227.005	-188.001	-153.150

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 8C
Current Site Name: GOLDSTONE MARS
Location: GOLDSTONE, CA

Monument Number: 7085
Type of Monument: 6" X 6" STEEL PLATE
Monument Inscription: MOBLAS 7085 GOLDSTONE VAL
Systems Using Monument: MOBLAS

Latitude: N 35 25' 28.09458''
Longitude: W 116 53' 07.95763''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 976.830 meters
Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/13-JAN-87
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS MONUMENT IS LOCATED ADJACENT TO THE DSS-14 MARS SITE AND
WAS USED FOR THE INITIAL MOBLAS OCCUPATIONS.

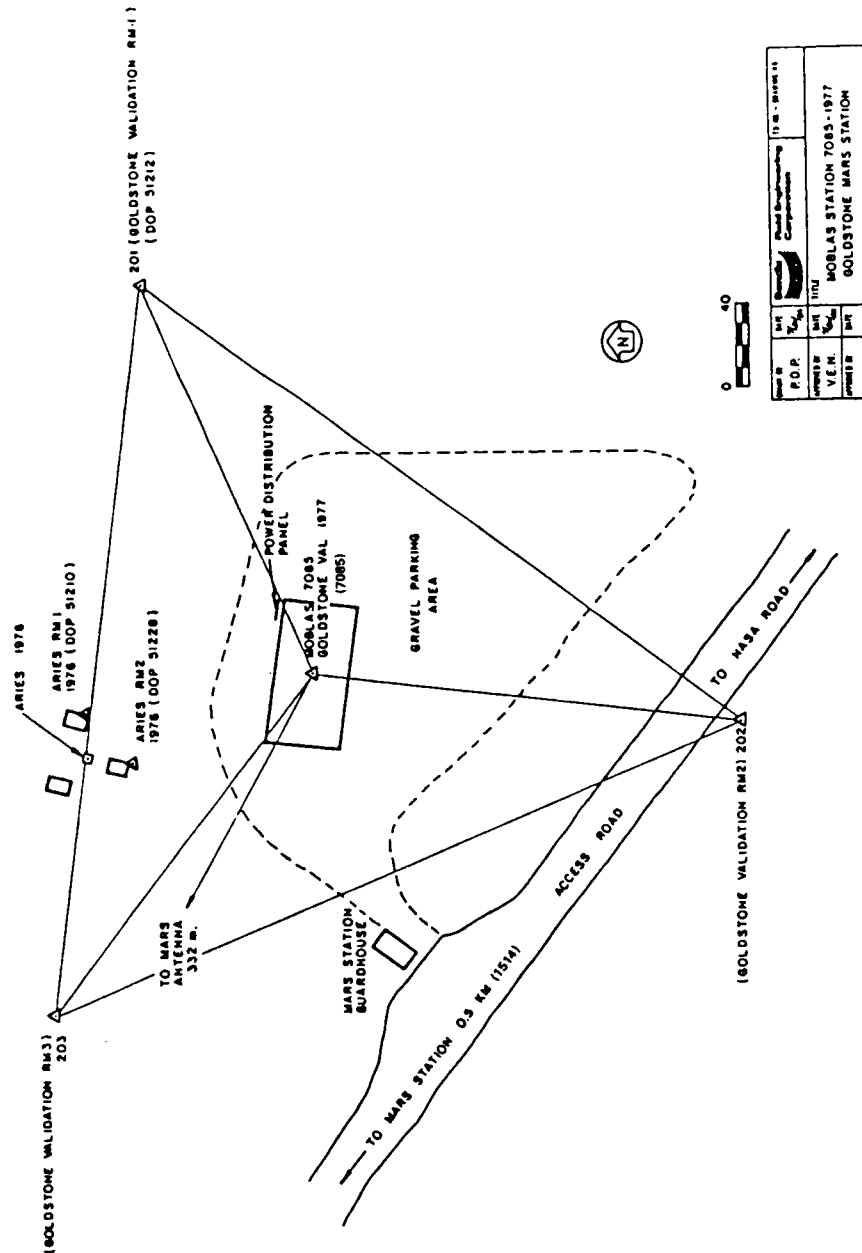
Differential Coordinates FROM Observing Monument 7085 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 87-01-13

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	101 ARIES #2 4-17-78	-2.761	20.589	26.171
--	ARIES RM-1 1976	3.021	19.297	28.215
--	ARIES RM-2 1976	-4.682	17.808	21.458
--	GOLDSTONE VAL RM 1 (DOPPLER 51212)	56.294	-13.692	19.560
--	GOLDSTONE VAL RM 2 "202"	-21.766	-25.429	-51.027
--	GOLDSTONE VAL RM 3 "203"	-33.991	40.046	30.886
1514	----	-227.005	188.001	153.150

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	101 ARIES #2 4-17-78	31.247	-11.773	1.223
--	ARIES RM-1 1976	33.760	-6.032	1.215
--	ARIES RM-2 1976	25.464	-12.229	1.220
--	GOLDSTONE VAL RM 1 (DOPPLER 51212)	23.617	56.401	0.543
--	GOLDSTONE VAL RM 2 "202"	-60.433	-7.913	-3.073
--	GOLDSTONE VAL RM 3 "203"	36.961	-48.427	1.324

Site Number: 8C
Current Site Name: GOLDSTONE MARS
Location: GOLDSTONE, CA



4-GOLD M-4

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 8C
Current Site Name: GOLDSTONE MARS
Location: GOLDSTONE, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7085	MOBLAS-1	70850101	12-DEC-77	31-MAR-78	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-- No Previous Occupations --					

-- SITE INFORMATION --

Site Number: 8A

Current Site Name: GOLDSTONE VENUS

Other Site Name: GOLDSTONE

Location: GOLDSTONE, CA

Geographic Region: CALIFORNIA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, PLATE STABILITY, POLAR MOTION/EARTH ROTATION, REGIONAL DEFORMATION, AND INTERCOMPARISON OF MEASUREMENT TECHNIQUES.

Site Description: THE SITE IS AN EXISTING NASA COMPLEX LOCATED NEAR FORT IRWIN WITHIN THE BOUNDARIES OF THE CAMP IRWIN MILITARY RESERVATION. THE SITE CONSISTS OF THE DSS-13 26-METER ANTENNA, A MOBLAS PAD, AND A THREE-PEDESTAL ARIES (MV-1) PAD. THIS SITE WAS PREVIOUSLY CHOSEN TO REPLACE THE MARS SITE, HOWEVER, THE MOJAVE ANTENNA HAS BEEN CHOSEN TO REPLACE THE GOLDSTONE COMPLEX ANTENNAS FOR ALL CDP VLBI MEASUREMENTS.

Site Topo Map: GOLDSTONE LAKE, CALIFORNIA. N3515-W11645/15, 1948, CORPS OF ENGINEERS, U.S. ARMY. AVAILABLE THROUGH U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: MOJAVE DESERT REGION

Local Geology: QUATERNARY ALLUVIUM LOCALLY; EAST OF SAN ANDREAS FAULT.

Comments: A NOTED ADVANTAGE OF THE VENUS DISH OVER THE MARS DISH IS ITS SIMILARITY TO THE HAYSTACK, OVRO, AND FORT DAVIS DISHES.

-- MONUMENT INFORMATION --

Site Number: 8A
 Current Site Name: GOLDSTONE VENUS
 Location: GOLDSTONE, CA
 Number of Observing Monuments: 3
 Surveyed into National Network? YES

Monument Number: 1513
 Type of Monument: INTERSECTION OF THE LOCAL ZENITH (Z)
 AND X AXIS
 Monument Inscription: NONE
 Systems Using Monument: 26-METER AZ-EL FIXED VLBI ANTENNA

Latitude: N 35 14' 51.82094''
 Longitude: W 116 47' 38.63051''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 1074.167 meters
 Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT 87-01-11/13-JAN-87
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS ANTENNA IS ALSO REFERENCED AS DSS-13 AND VENUS.

Differential Coordinates FROM Observing Monument 1513 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 87-01-13

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	MOBLAS 7115 RM-1 (DOPPLER 51266)	234.326	-67.277	25.928
--	MOBLAS 7115-A 1979	268.981	-62.793	50.158
7115	MOBLAS 7115 1979	267.503	-69.179	40.943
7275	ARIES 6-9-81 9 MTR	263.944	-122.227	-23.384

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 8A
Current Site Name: GOLDSTONE VENUS
Location: GOLDSTONE, CA

Monument Number: 7115
Type of Monument: STANDARD NASA DISK
Monument Inscription: MOBLAS 7115-1979
Systems Using Monument: MOBLAS AND TLRS

Latitude: N 35 14' 54.00723''
Longitude: W 116 47' 27.95387''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 1049.753 meters
Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT 87-01-13/13-JAN-87
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS MONUMENT IS LOCATED ADJACENT TO 26-METER VENUS ANTENNA.

Differential Coordinates FROM Observing Monument 7115 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 87-01-13

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	MOBLAS 7115-A 1979	1.478	6.386	9.215
--	MOBLAS RM-1 (DOPPLER 51266)	-33.177	1.902	-15.015
1513	----	-267.503	69.179	-40.943
7275	ARIES 6-9-81 9MTR	-3.559	-53.048	-64.327

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	MOBLAS 7115-A 1979	11.200	-1.559	0.119
--	MOBLAS RM-1 (DOPPLER 51266)	-19.912	-30.473	2.160
7275	ARIES 6-9-81 9MTR	-80.788	20.734	2.858

-- MONUMENT INFORMATION --

(Continued)

Site Number: 8A
Current Site Name: GOLDSTONE VENUS
Location: GOLDSTONE, CA

Monument Number: 7275
Type of Monument: BRASS DISK IN CONCRETE
Monument Inscription: ARIES 6-9-81 9MTR
Systems Using Monument: MV-1

Latitude: N 35 14' 51.38616''
Longitude: W 116 47' 27.13387''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 1052.612 meters
Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT 87-01-13/13-JAN-87
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7275 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 87-01-13

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	MOBLAS 7115 RM-1 (DOPPLER 51266)	-29.618	54.950	49.312
--	MOBLAS 7115-A 1979	5.037	59.434	73.542
1513	----	-263.944	122.227	23.384
7115	MOBLAS 7115 1979	3.559	53.048	64.327

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	MOBLAS 7115 RM-1 (DOPPLER 51266)	60.874	-51.208	-0.697
--	MOBLAS 7115-A 1979	91.987	-22.295	-2.739
7115	MOBLAS 7115 1979	80.787	-20.736	-2.858

-- SITE SKETCH --

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Site Number: 8A
Current Site Name: GOLDSTONE VENUS
Location: GOLDSTONE, CA

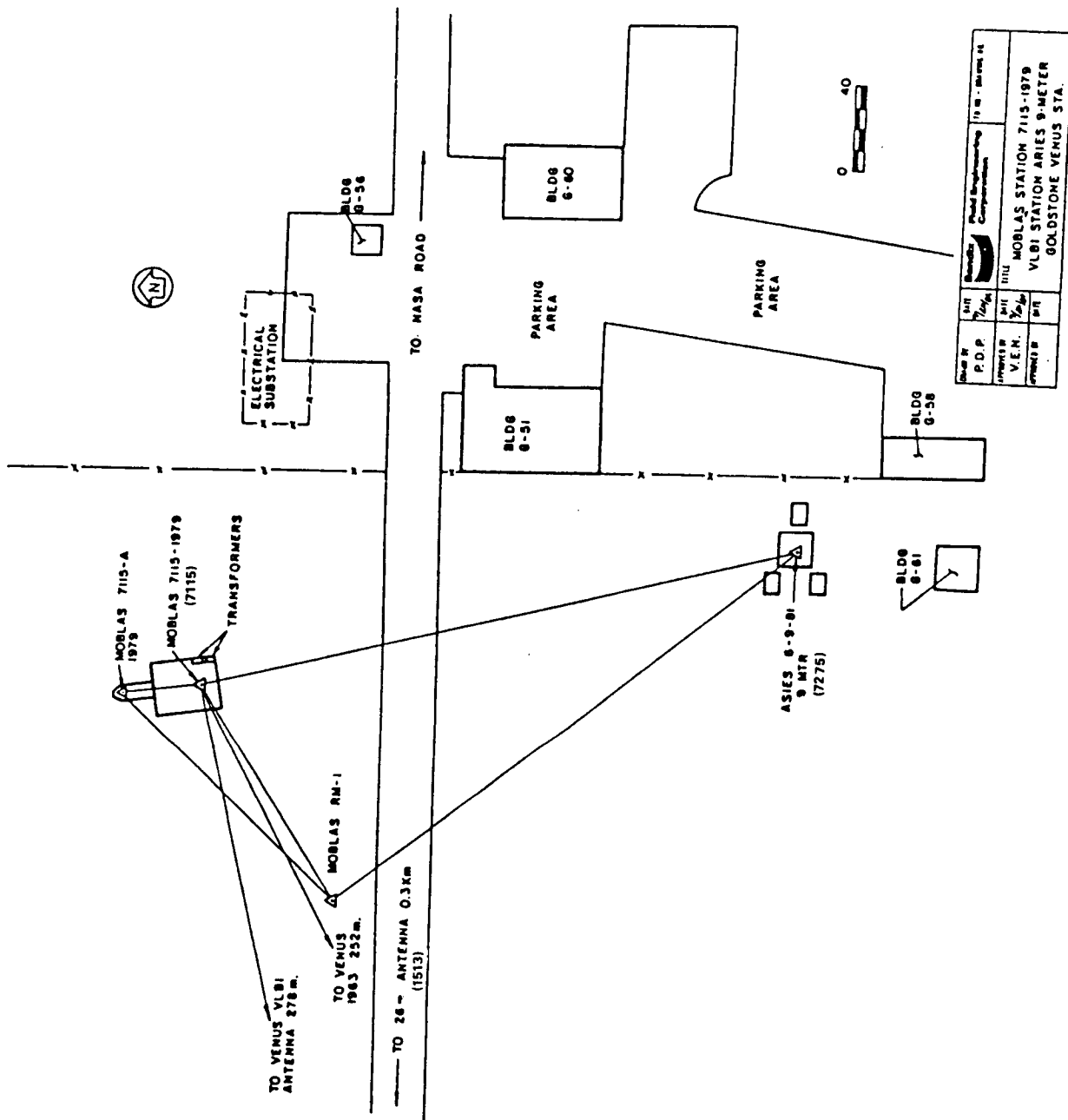


Figure 4-GOLD V. GOLDSTONE VENUS Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 8A
Current Site Name: GOLDSTONE VENUS
Location: GOLDSTONE, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7115	MOBLAS-3	71150301	15-JUN-79	10-APR-81	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
1513	DSS 13	15138201	07-JAN-80	07-JAN-80	YES
1513	DSS 13	15138201	29-JUL-80	29-JUL-80	YES
1513	DSS 13	15138201	31-JUL-80	31-JUL-80	YES
1513	DSS 13	15138201	03-NOV-80	03-NOV-80	YES
1513	DSS 13	15138201	15-FEB-81	15-FEB-81	YES
1513	DSS 13	15138201	15-FEB-81	15-FEB-81	YES
1513	DSS 13	15138201	17-FEB-81	17-FEB-81	YES
1513	DSS 13	15138201	17-FEB-81	17-FEB-81	YES
1513	DSS 13	15138201	18-FEB-81	18-FEB-81	YES
1513	DSS 13	15138201	18-FEB-81	18-FEB-81	YES
1513	DSS 13	15138201	11-MAY-81	11-MAY-81	YES
1513	DSS 13	15138201	13-MAY-81	13-MAY-81	YES
1513	DSS 13	15138201	14-MAY-81	14-MAY-81	YES
1513	DSS 13	15138201	16-MAY-81	16-MAY-81	YES
1513	DSS 13	15138201	16-MAY-81	16-MAY-81	YES
1513	DSS 13	15138201	17-MAY-81	17-MAY-81	YES
1513	DSS 13	15138201	31-AUG-81	31-AUG-81	YES
1513	DSS 13	15138201	02-SEP-81	02-SEP-81	YES
1513	DSS 13	15138201	12-DEC-81	12-DEC-81	YES
1513	DSS 13	15138201	14-DEC-81	14-DEC-81	YES
1513	DSS 13	15138201	18-DEC-81	18-DEC-81	YES
1513	DSS 13	15138201	17-OCT-82	17-OCT-82	YES
1513	DSS 13	15138201	18-OCT-82	18-OCT-82	YES
1513	DSS 13	15138201	22-OCT-82	22-OCT-82	YES
1513	DSS 13	15138201	24-OCT-82	24-OCT-82	YES
1513	DSS 13	15138201	27-JUN-83	27-JUN-83	YES
1513	DSS 13	15138201	29-JUN-83	29-JUN-83	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 8A
Current Site Name: GOLDSTONE VENUS
Location: GOLDSTONE, CA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
1513	DSS 13	15138201	23-AUG-83	23-AUG-83	YES
1513	DSS 13	15138201	26-AUG-83	26-AUG-83	YES
1513	DSS 13	15138201	28-AUG-83	28-AUG-83	YES
1513	DSS 13	15138201	07-JAN-84	08-JAN-84	YES
1513	DSS 13	15138201	14-JAN-84	15-JAN-84	YES
1513	DSS 13	15138201	08-FEB-84	09-FEB-84	YES

-- SITE INFORMATION --

Site Number: 142

Current Site Name: GRASSE
Other Site Name:
Location: GRASSE, FRANCE
Geographic Region: EUROPE
Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, PLATE STABILITY, AND POLAR/EARTH ROTATION.

Site Description: THE STATION IS LOCATED IN SOUTHEAST FRANCE, APPROXIMATELY 15 KILOMETERS NORTH OF THE CITY OF GRASSE AT THE CERGA OBSERVATORY. THREE FIXED LASERS HAVE BEEN OPERATIONAL AT THIS SITE. ONE LASER HAS SINCE MOVED TO THE SAN FERNANDO STATION IN SOUTHERN SPAIN. ONE OF THE TWO OPERATIONAL LASERS IS USED FOR LUNAR RANGING AND THE OTHER IS USED FOR RANGING TO LAGEOS FOR SLR MEASUREMENTS.

Site Topo Map: ROQUESTERON 3642, 1982. AVAILABLE THROUGH IGN, 107 RUE DE LA BOETIE, 75008 PARIS.

-- GEOLOGICAL INFORMATION --

Geological Province: PREALPS REGION OF GRASSE

Local Geology: SECONDARY LIMESTONE PLATEAU (ABOUT 20 KILOMETERS SQUARE IN SIZE) WITH SINK HOLES AND DEEP CAVES.

Comments: GRAVIMETRICAL DATA WAS OBTAINED AT THIS SITE AROUND 1975 BY THE ROYAL OBSERVATORY OF BELGIUM AT UCCLE.

-- MONUMENT INFORMATION --

Site Number: 142
 Current Site Name: GRASSE
 Location: GRASSE, FRANCE
 Number of Observing Monuments: 3
 Surveyed into National Network? YES

Monument Number: 7835
 Type of Monument: AXES OF TELESCOPE
 Monument Inscription: NONE
 Systems Using Monument: FIXED LASER

Latitude: N 43 45' 16.79616''
 Longitude: E 6 55' 17.80621''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 1281.150 meters
 Survey Source/Date Reported: GRGS-CERGA/22-AUG-85
 Datum/Ellipsoid: EUROPEAN DATUM SYSTEM E.D. 50

Comments: THE LOCAL SURVEY (1975-1978) IS JOINED TO THE NATIONAL NETWORK (IGN, 1980) GEODESICAL MARKER: CAUSSOLS III.

Differential Coordinates FROM Observing Monument 7835 TO
 Reference Monuments and Other Observing Monuments

Data Source: GRGS-CERGA/BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	REFERENCE MONUMENT (M7)	19.406	-19.362	-24.654
--	REFERENCE POINT (M13)	241.562	224.772	-282.127
7842	NONE (M8)	12.374	28.642	-16.002
7845	NONE (M10)	0.578	36.473	-4.439

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	REFERENCE MONUMENT (M7)	-29.517	-21.559	-4.819
7842	NONE (M8)	-22.442	26.941	0.300
7845	NONE (M10)	-6.644	36.137	0.520

-- MONUMENT INFORMATION --

(Continued)

Site Number: 142
Current Site Name: GRASSE
Location: GRASSE, FRANCE

Monument Number: 7842
Type of Monument: AXES OF TELESCOPE
Monument Inscription: NONE
Systems Using Monument: FIXED LASER

Latitude: N 43 45' 16.06919''
Longitude: E 6 55' 19.01021''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 1281.450 meters
Survey Source/Date Reported: GRGS-CERGA/22-AUG-85
Datum/Ellipsoid: EUROPEAN DATUM SYSTEM E.D. 50

Comments: THIS SYSTEM HAS BEEN MOVED TO SAN FERNANDO, SPAIN.

Differential Coordinates FROM Observing Monument 7842 TO
Reference Monuments and Other Observing Monuments

Data Source: GRGS-CERGA/BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	NONE (M13)	229.188	196.130	-266.125
--	NONE (M7)	7.032	-48.004	-8.652
7835	NONE (M9)	-12.374	-28.642	16.002
7845	NONE (M10)	-11.796	7.831	11.563

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	NONE (M7)	-7.075	-48.502	-5.119
7835	NONE (M9)	22.442	-26.941	-0.300
7845	NONE (M10)	16.187	9.195	0.220

-- MONUMENT INFORMATION --

(Continued)

Site Number: 142
Current Site Name: GRASSE
Location: GRASSE, FRANCE

Monument Number: 7845
Type of Monument: AXES OF TELESCOPE
Monument Inscription: NONE
Systems Using Monument: LUNAR LASER

Latitude: N 43 45' 16.58096''
Longitude: E 6 55' 19.42118''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 1281.670 meters
Survey Source/Date Reported: GRGS-CERGA/22-AUG-85
Datum/Ellipsoid: EUROPEAN DATUM SYSTEM E.D. 50

Comments: NONE

Differential Coordinates FROM Observing Monument 7845 TO
Reference Monuments and Other Observing Monuments

Data Source: GRGS-CERGA

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	NONE (M13)	240.984	188.299	-277.688
--	NONE (M7)	18.828	-55.835	-20.215
7835	NONE (M9)	-0.578	-36.473	4.439
7842	NONE (M8)	11.796	-7.831	-11.563

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	NONE (M7)	-22.873	-57.696	-5.339
7835	NONE (M9)	6.644	-36.137	-0.520
7842	NONE (M8)	-16.187	-9.195	-0.220

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-- SITE SKETCH --

Site Number: 142
Current Site Name: GRASSE
Location: GRASSE, FRANCE

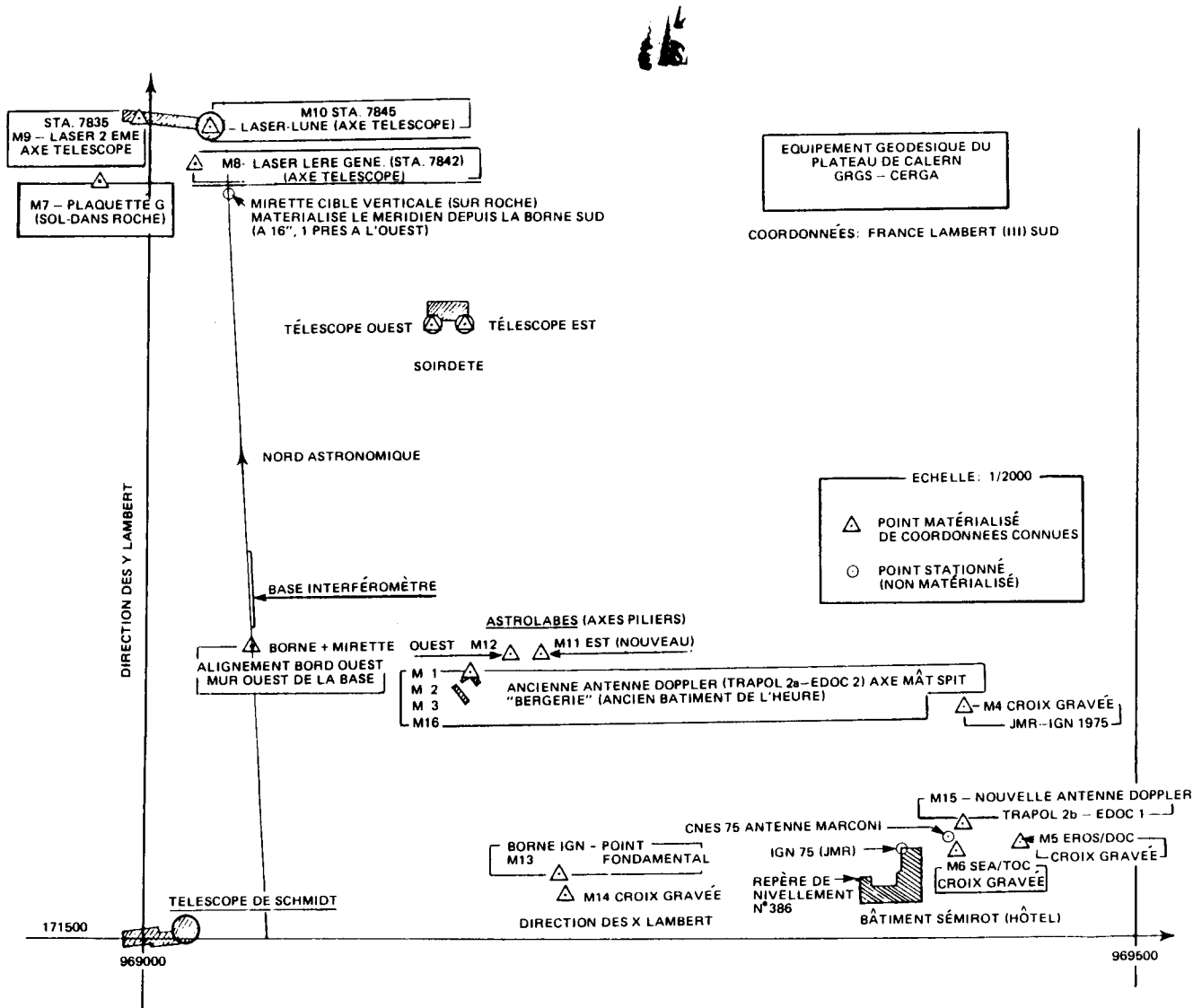


Figure 4-GRASSE. GRASSE Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 142
Current Site Name: GRASSE
Location: GRASSE, FRANCE

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7835	GRASSE	78353101	01-MAY-76	21-MAR-83	YES
7835	GRASSE	78353102	23-DEC-83	---	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
--------------------	---------------------	--------------------------	------------------	----------------	-----------------

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 610

Current Site Name: GRAZ

Other Site Name:

Location: GRAZ, AUSTRIA

Geographic Region: EUROPE

Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF POLAR MOTION AND EARTH ROTATION, AND MEASUREMENTS SUPPORTING SLR TECHNIQUE DEVELOPMENT.

Site Description: THE STATION IS LOCATED AT THE LUSTBUHEL OBSERVATORY IN GRAZ, AUSTRIA. A FIXED LASER TRACKS LAGEOS AND OTHER HIGH ALTITUDE SATELLITES FOR LASER RANGING MEASUREMENTS.

Site Topo Map: UNKNOWN

-- GEOLOGICAL INFORMATION --

Geological Province: UNKNOWN

Local Geology: UNKNOWN

Comments: A HORIZONTAL PENDULUM AND AN EARTH TIDE GRAVIMETER ARE LOCATED FOUR KILOMETERS FROM THE LASER STATION.

-- MONUMENT INFORMATION --

Site Number: 610
Current Site Name: GRAZ
Location: GRAZ, AUSTRIA
Number of Observing Monuments: 1
Surveyed into National Network? YES

Monument Number: 7839
Type of Monument: AZIMUTH-ELEVATION AXES INTERSECTION
Monument Inscription: NONE
Systems Using Monument: FIXED LASER

Latitude: N 47 04' 04.6435''
Longitude: E 15 29' 39.3914''
Elevation Above MSL (Geoid): 495.427 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: GEORG KIRCHNER/BFEC/03-JUN-86
Datum/Ellipsoid: ED79/GEOID BOMFORD 70

Comments: NONE

Differential Coordinates FROM Observing Monument 7839 TO
Reference Monuments and Other Observing Monuments

Data Source: GEORG KIRCHNER/BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	NONE (REFERENCE MARKER ON TOP)	2.531	-8.496	1.298

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	NONE (REFERENCE MARKER ON TOP)	-0.759	8.864	-1.067

-- SITE SKETCH --

Site Number: 610
Current Site Name: GRAZ
Location: GRAZ, AUSTRIA

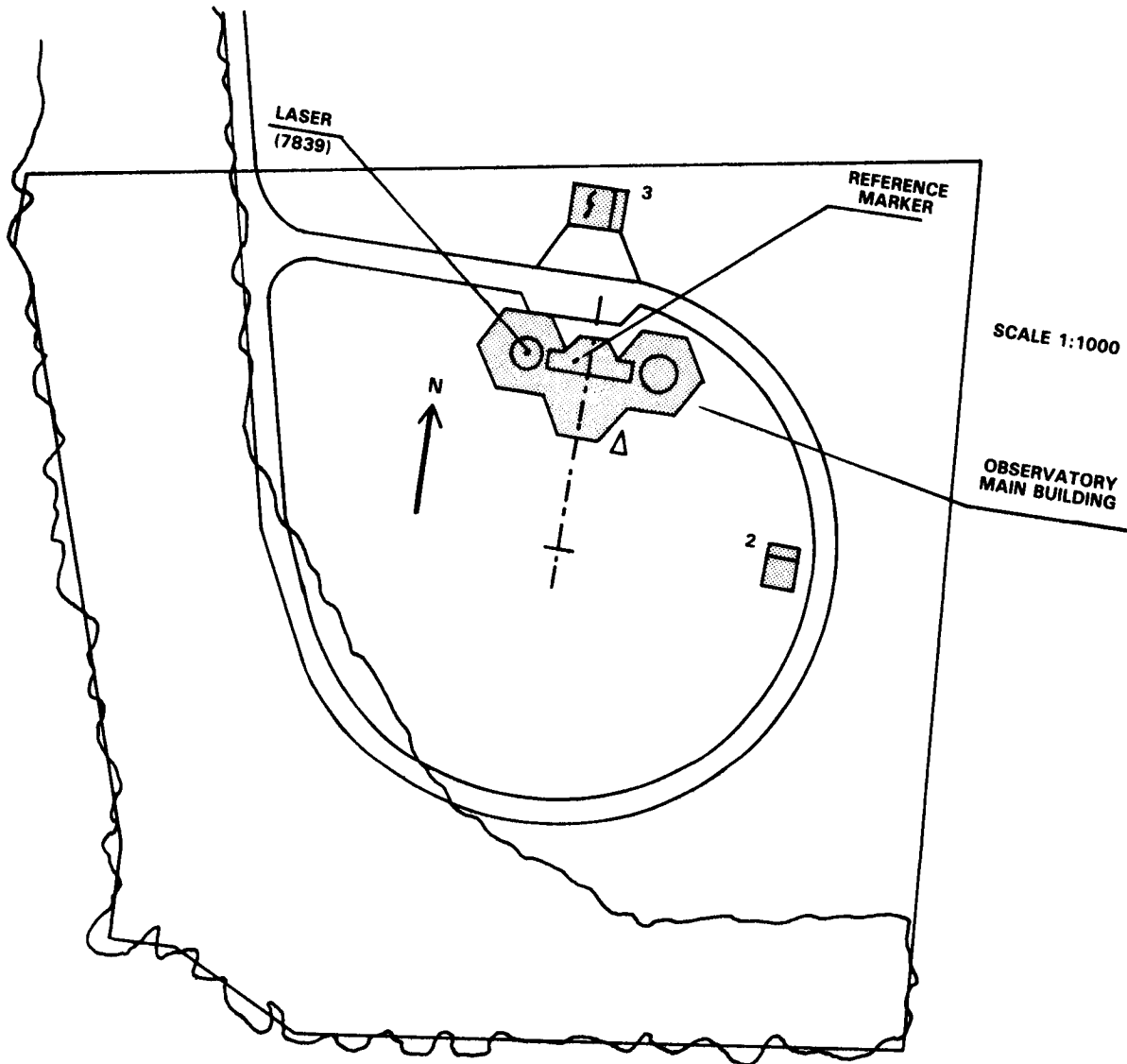


Figure 4-GRAZ. GRAZ Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 610
Current Site Name: GRAZ
Location: GRAZ, AUSTRIA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7839	AUSLAS	78393401	01-SEP-83	---	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 38
Current Site Name: GREEN BANK
Other Site Name: NRAO
Location: NRAO, GREEN BANK, WV
Geographic Region: NORTH AMERICA
Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, PLATE STABILITY, AND POLAR MOTION/EARTH ROTATION.

Site Description: THE STATION IS LOCATED IN EASTERN WEST VIRGINIA AT THE NATIONAL RADIO ASTRONOMY OBSERVATORY (NRAO) OPERATED BY THE NATIONAL SCIENCE FOUNDATION. THE 140-FOOT RADIO TELESCOPE HAS BEEN USED FOR VLBI MEASUREMENTS. THIS STATION IS NO LONGER AN ACTIVE SITE IN THE CRUSTAL DYNAMICS PROGRAM.

Site Topo Map: CASS, WEST VIRGINIA, 15 MINUTE.

-- GEOLOGICAL INFORMATION --

Geological Province: THE VALLEY AND RIDGE PROVINCE

Local Geology: PALEOZOIC CONSOLIDATED SEDIMENTARY ROCKS

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 38
Current Site Name: GREEN BANK
Location: NRAO, GREEN BANK, WV
Number of Observing Monuments: 1
Surveyed into National Network? YES

Monument Number: 7204
Type of Monument: REFERENCE POINT ON RADIO TELESCOPE
Monument Inscription: NONE
Systems Using Monument: 43-METER RADIO TELESCOPE

Latitude: N 38 26' 15.709''
Longitude: W 79 50' 09.613''
Elevation Above MSL (Geoid): 844.715 meters
Height Above Ellipsoid: 847.3 meters
Survey Source/Date Reported: FIRST GEODETIC SURVEY SQUADRON USAF/30-NOV-70
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THE REFERENCE POINT IS THE PRIMARY POINT OF THE FIXED VLBI
RADIO TELESCOPE.

Differential Coordinates FROM Observing Monument 7204 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

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Site Number: 38
Current Site Name: GREEN BANK
Location: NRAO, GREEN BANK, WV

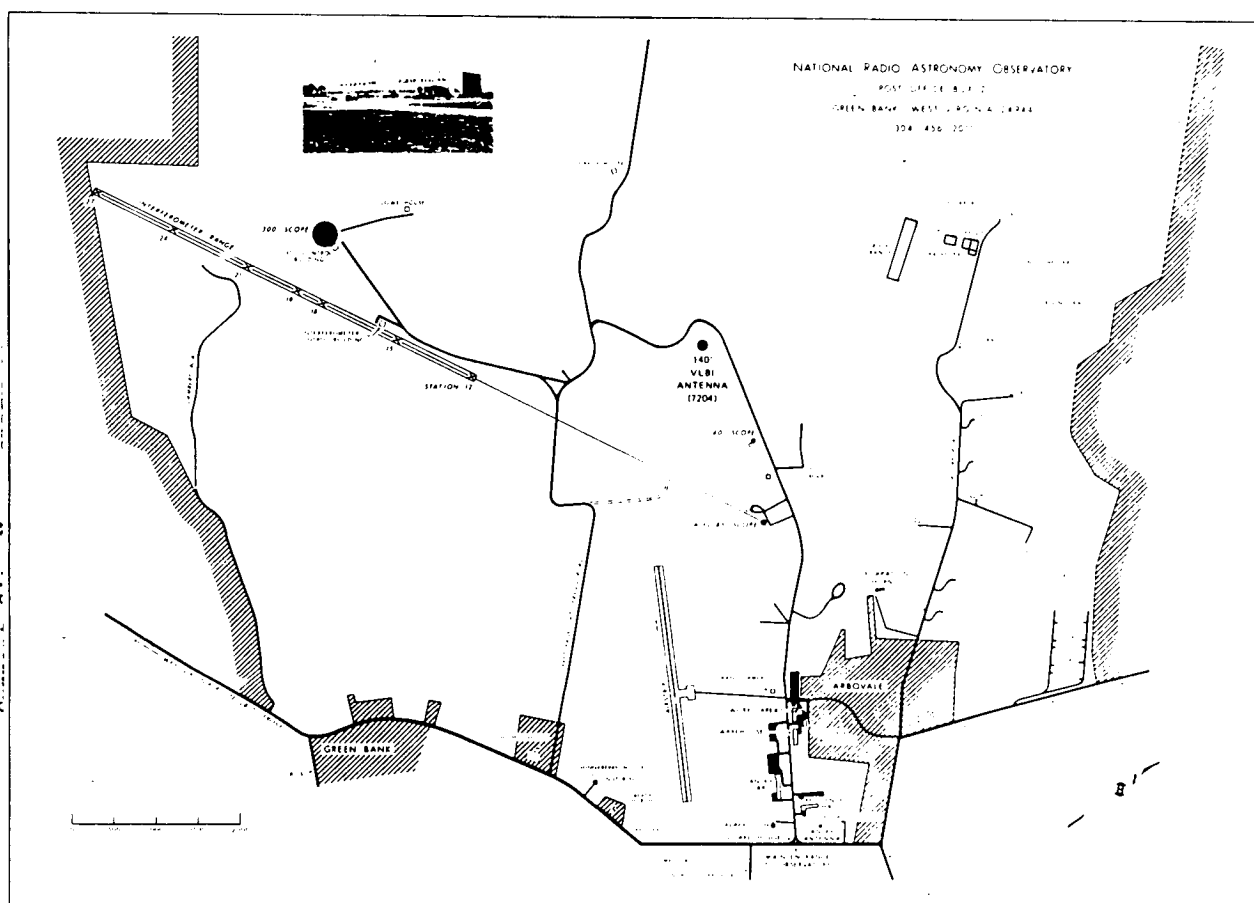


Figure 4-GRNBK. GREEN BANK Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 38
 Current Site Name: GREEN BANK
 Location: NRAO, GREEN BANK, WV

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7204	NRAO 140	72048001	09-OCT-76	09-OCT-76	YES
7204	NRAO 140	72048001	11-OCT-76	11-OCT-76	YES
7204	NRAO 140	72048001	13-DEC-76	13-DEC-76	YES
7204	NRAO 140	72048001	15-DEC-76	15-DEC-76	YES
7204	NRAO 140	72048001	27-MAR-77	27-MAR-77	YES
7204	NRAO 140	72048001	26-JUN-77	26-JUN-77	YES
7204	NRAO 140	72048001	24-SEP-77	24-SEP-77	YES
7204	NRAO 140	72048001	13-DEC-77	13-DEC-77	YES
7204	NRAO 140	72048001	13-JAN-78	13-JAN-78	YES
7204	NRAO 140	72048001	24-FEB-78	24-FEB-78	YES
7204	NRAO 140	72048001	17-MAY-78	17-MAY-78	YES
7204	NRAO 140	72048001	09-APR-79	09-APR-79	YES
7204	NRAO 140	72048001	03-AUG-79	03-AUG-79	YES
7204	NRAO 140	72048001	25-NOV-79	25-NOV-79	YES
7204	NRAO 140	72048001	11-APR-80	11-APR-80	YES
7204	NRAO 140	72048001	18-NOV-81	18-NOV-81	YES
7204	NRAO 140	72048001	19-NOV-81	19-NOV-81	YES
7204	NRAO 140	72048001	15-DEC-82	15-DEC-82	YES
7204	NRAO 140	72048001	16-DEC-82	16-DEC-82	YES

-- SITE INFORMATION --

Site Number: 39

Current Site Name: GREENBELT

Other Site Name:

Location: GORF, GSFC, GREENBELT, MD

Geographic Region: NORTH AMERICA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF EARTH ROTATION/POLAR MOTION, INTERNAL PLATE DEFORMATION, PLATE MOTION AND PLATE STABILITY, AND DEVELOPMENT OF SLR TECHNIQUE.

Site Description: THE STATION IS LOCATED AT NASA'S GODDARD OPTICAL RESEARCH FACILITY (GORF) OUTSIDE THE WASHINGTON D.C. CAPITAL BELTWAY IN GREENBELT, MARYLAND. THE GORF FACILITY IS EQUIPPED WITH 20 OBSERVING MONUMENTS, ONE OF WHICH IS PERMANENTLY OCCUPIED BY MOBLAS-7. THERE ARE THREE TLRS PADS AND ONE MTLRS PAD. THIS SITE IS THE MAJOR COLLOCATION AND ENGINEERING SITE FOR CALIBRATION AND FIELD TESTING OF LASERS.

Site Topo Map: LAUREL, MARYLAND. 1943-65- (71 PRINT), U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: COASTAL PLAIN

Local Geology: THICK SECTION OF CRETACEOUS SANDS AND GRAVELS

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 39
 Current Site Name: GREENBELT
 Location: GORF, GSFC, GREENBELT, MD
 Number of Observing Monuments: 18
 Surveyed into National Network? YES

Monument Number: 7063
 Type of Monument: STANDARD NASA DISK
 Monument Inscription: NONE
 Systems Using Monument: STALAS FIXED LASER

Latitude: N 39 01' 12.9517''
 Longitude: W 76 49' 41.1671''
 Elevation Above MSL (Geoid): 53.120 meters
 Height Above Ellipsoid: 54.2 meters
 Survey Source/Date Reported: NASA-GSFC, CODE 853/01-JAN-73
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: STALAS WAS DEACTIVATED 28-AUG-81.

Differential Coordinates FROM Observing Monument 7063 TO
 Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7064	----	-25.512	25.764	36.077
7065	----	-23.461	16.671	24.571
7083	----	-22.032	10.156	16.338
7100	7100-1977	640.760	199.391	44.289
7101	7101-1977	525.524	187.987	61.086
7102	7102-1978	-28.165	14.710	23.523
7103	7103-1978	-29.119	19.030	28.964
7104	7104-1978	381.057	170.788	83.353
7105	7105-1981	4.497	17.162	19.125
7889	7889-1981	19.360	43.398	45.492
7899	7899-1980	649.983	198.940	41.537

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --

-- MONUMENT INFORMATION --

(Continued)

Site Number: 39
Current Site Name: GREENBELT
Location: GORF, GSFC, GREENBELT, MD

Monument Number: 7064
Type of Monument: STANDARD NASA DISK
Monument Inscription: NONE
Systems Using Monument: MOBILE LASER

Latitude: N 39 01' 14.49157''
Longitude: W 76 49' 41.95576''
Elevation Above MSL (Geoid): 51.826 meters
Height Above Ellipsoid: 49.13 meters
Survey Source/Date Reported: NASA-GSFC, CODE 853/01-AUG-73
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7064 TO
Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7063	----	25.512	-25.764	-36.077
7065	----	2.051	-9.093	-11.506
7083	----	3.480	-15.608	-19.739
7100	7100-1977	666.272	173.627	8.212
7101	7101-1977	551.036	162.223	25.009
7102	7102-1978	-2.653	-11.054	-12.554
7103	7103-1978	-3.607	-6.734	-7.113
7104	7104-1978	406.569	145.024	47.276
7105	7105-1981	30.463	-8.595	-16.961
7125	7125-1985	56.498	-26.056	-46.348
7130	7130-1985	46.040	17.308	8.893
7889	7889-1981	44.872	17.634	9.415
7899	7899-1980	675.495	173.176	5.460

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
7105	7105-1981	-22.818	27.703	1.217
7125	7125-1985	-60.089	49.073	0.534
7130	7130-1985	10.913	48.774	0.658

-- MONUMENT INFORMATION --

(Continued)

Site Number: 39
Current Site Name: GREENBELT
Location: GORF, GSFC, GREENBELT, MD

Monument Number: 7065
Type of Monument: STANDARD NASA DISK
Monument Inscription: NONE
Systems Using Monument: MOBILE LASER

Latitude: N 39 01' 14.0113''
Longitude: W 76 49' 41.9587''
Elevation Above MSL (Geoid): 51.824 meters
Height Above Ellipsoid: 52.9 meters
Survey Source/Date Reported: NASA-GSFC, CODE 853/01-OCT-73
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7065 TO
Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	----- Differential Coordinates ----- X	Y	Z
7063	----	23.461	-16.671	-24.571
7064	----	-2.051	9.093	11.506
7083	----	1.429	-6.515	-8.233
7100	7100-1977	664.221	182.720	19.718
7101	7101-1977	548.985	171.316	36.515
7102	7102-1978	-4.704	-1.961	-1.048
7103	7103-1978	-5.658	2.359	4.393
7104	7104-1978	404.518	154.117	58.782
7105	7105-1981	28.408	0.491	-5.446
7889	7889-1981	42.821	26.727	20.921
7899	7899-1980	673.444	182.269	16.966

Mon. Number	Monument Inscription	----- Differential Coordinates ----- North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 39
Current Site Name: GREENBELT
Location: GORF, GSFC, GREENBELT, MD

Monument Number: 7083
Type of Monument: STANDARD NASA DISK
Monument Inscription: NONE
Systems Using Monument: MOBILE LASER

Latitude: N 39 01' 13.6677''
Longitude: W 76 49' 41.9627''
Elevation Above MSL (Geoid): 51.822 meters
Height Above Ellipsoid: 52.9 meters
Survey Source/Date Reported: NASA-GSFC, CODE 853/01-SEP-75
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7083 TO
Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7063	----	22.032	-10.156	-16.338
7064	----	-3.480	15.608	19.739
7065	----	-1.429	6.515	8.233
7100	7100-1977	662.792	189.235	27.951
7101	7101-1977	547.556	177.831	44.748
7102	7102-1978	-6.133	4.554	7.185
7103	7103-1978	-7.087	8.874	12.626
7104	7104-1978	403.089	160.632	67.015
7105	7105-1981	26.979	7.006	2.787
7889	7889-1981	41.392	33.242	29.154
7899	7899-1980	672.015	188.784	25.199

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 39
Current Site Name: GREENBELT
Location: GORF, GSFC, GREENBELT, MD

Monument Number: 7100
Type of Monument: STANDARD NASA DISK
Monument Inscription: 7100-1977
Systems Using Monument: MOBILE LASER

Latitude: N 39 01' 15.0493''
Longitude: W 76 49' 13.3436''
Elevation Above MSL (Geoid): 43.644 meters
Height Above Ellipsoid: 44.7 meters
Survey Source/Date Reported: NASA-GSFC, CODE 853/01-JUL-77
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7100 TO
Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7063	----	-640.760	-199.391	-44.289
7064	----	-666.272	-173.627	-8.212
7065	----	-664.221	-182.720	-19.718
7083	----	-662.792	-189.235	-27.951
7101	7101-1977	-115.236	-11.404	16.797
7102	7102-1978	-668.925	-184.681	-20.766
7103	7103-1978	-669.879	-180.361	-15.325
7104	7104-1978	-259.703	-28.603	39.064
7105	7105-1981	-635.813	-182.229	-25.164
7889	7889-1981	-621.400	-155.993	1.203
7899	7899-1980	9.223	-0.451	-2.752

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --

-- MONUMENT INFORMATION --

(Continued)

Site Number: 39
Current Site Name: GREENBELT
Location: GORF, GSFC, GREENBELT, MD

Monument Number: 7101
Type of Monument: STANDARD NASA DISK
Monument Inscription: 7101-1977
Systems Using Monument: MOBLAS

Latitude: N 39 01' 15.7822''
Longitude: W 76 49' 18.1157''
Elevation Above MSL (Geoid): 42.433 meters
Height Above Ellipsoid: 43.53 meters
Survey Source/Date Reported: NASA-GSFC, CODE 853/01-JUL-77
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7101 TO
Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7063	----	-525.524	-187.987	-61.086
7064	----	-551.036	-162.223	-25.009
7065	----	-548.985	-171.316	-36.515
7083	----	-547.556	-177.831	-44.748
7100	7100-1977	115.236	11.404	-16.797
7102	7102-1978	-553.689	-173.277	-37.563
7103	7103-1978	-554.643	-168.957	-32.122
7104	7104-1978	-144.467	-17.199	22.267
7105	7105-1981	-520.577	-170.825	-41.961
7889	7889-1981	-506.164	-144.589	-15.594
7899	7899-1980	124.459	10.953	-19.549

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 39
Current Site Name: GREENBELT
Location: GORF, GSFC, GREENBELT, MD

Monument Number: 7102
Type of Monument: STANDARD NASA DISK
Monument Inscription: 7102-1978
Systems Using Monument: MOBILE LASER

Latitude: N 39 01' 13.9678''
Longitude: W 76 49' 42.1677''
Elevation Above MSL (Geoid): 51.810 meters
Height Above Ellipsoid: 52.9 meters
Survey Source/Date Reported: NASA-GSFC, CODE 853/01-JUL-78
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS MONUMENT HAS BEEN OCCUPIED BY MOBLAS-3 SINCE DECEMBER 1984.

Differential Coordinates FROM Observing Monument 7102 TO
Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7063	----	28.165	-14.710	-23.523
7064	----	2.653	11.054	12.554
7065	----	4.704	1.961	1.048
7083	----	6.133	-4.554	-7.185
7100	7100-1977	668.925	184.681	20.766
7101	7101-1977	553.689	173.277	37.563
7103	7103-1978	-0.954	4.320	5.441
7104	7104-1978	409.222	156.078	59.830
7105	7105-1981	33.112	2.452	-4.398
7889	7889-1981	47.525	28.688	21.969
7899	7899-1980	678.148	184.230	18.014

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 39
Current Site Name: GREENBELT
Location: GORF, GSFC, GREENBELT, MD

Monument Number: 7103
Type of Monument: STANDARD NASA DISK
Monument Inscription: 7103-1978
Systems Using Monument: MOBILE LASER

Latitude: N 39 01' 14.1952''
Longitude: W 76 49' 42.1655''
Elevation Above MSL (Geoid): 51.803 meters
Height Above Ellipsoid: 52.9 meters
Survey Source/Date Reported: NASA-GSFC, CODE 853/01-AUG-78
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7103 TO
Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7063	----	29.119	-19.030	-28.964
7064	----	3.607	6.734	7.113
7065	----	5.658	-2.359	-4.393
7083	----	7.087	-8.874	-12.626
7100	7100-1977	669.879	180.361	15.325
7101	7101-1977	554.643	168.957	32.122
7102	7102-1978	0.954	-4.320	-5.441
7104	7104-1978	410.176	151.758	54.398
7105	7105-1981	34.066	-1.868	-9.839
7889	7889-1981	48.479	24.368	16.528
7899	7899-1980	679.102	179.910	12.573

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --

-- MONUMENT INFORMATION --

(Continued)

Site Number: 39
Current Site Name: GREENBELT
Location: GORF, GSFC, GREENBELT, MD

Monument Number: 7104
Type of Monument: STANDARD NASA DISK
Monument Inscription: 7104-1978
Systems Using Monument: MOBILE LASER

Latitude: N 39 01' 16.6737''
Longitude: W 76 49' 24.1259''
Elevation Above MSL (Geoid): 43.876 meters
Height Above Ellipsoid: 45.0 meters
Survey Source/Date Reported: NASA-GSFC-BFEC, CODE 853/01-SEP-78
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7104 TO
Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7063	----	-381.057	-170.788	-83.353
7064	----	-406.569	-145.024	-47.276
7065	----	-404.518	-154.117	-58.782
7083	----	-403.089	-160.632	-67.015
7100	7100-1977	259.703	28.603	-39.064
7101	7101-1977	144.467	17.199	-22.267
7102	7102-1978	-409.222	-156.078	-59.830
7103	7103-1978	-410.716	-151.758	-54.389
7105	7105-1981	-376.110	-153.626	-64.228
7889	7889-1981	-361.697	-127.390	-37.861
7899	7899-1980	268.926	28.152	-41.816

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --

-- MONUMENT INFORMATION --

(Continued)

Site Number: 39
Current Site Name: GREENBELT
Location: GORF, GSFC, GREENBELT, MD

Monument Number: 7105
Type of Monument: STANDARD NASA DISK
Monument Inscription: 7105-1981
Systems Using Monument: MOBLAS-7

Latitude: N 39 01' 13.75165''
Longitude: W 76 49' 40.80418''
Elevation Above MSL (Geoid): 53.047 meters
Height Above Ellipsoid: 50.346 meters
Survey Source/Date Reported: BFEC/NGS HAVAGO/01-JAN-86
Datum/Ellipsoid: NAD 1927, ADJUSTMENT 1971/CLARKE 1866

Comments: MOBLAS-7 HAS BEEN OPERATING OVER THIS MONUMENT SINCE 1981.

Differential Coordinates FROM Observing Monument 7105 TO
Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7063	----	-4.947	-17.162	-19.125
7064	----	-30.463	8.595	16.961
7065	----	-28.408	-0.491	5.446
7083	----	-26.979	-7.006	-2.787
7100	7100-1977	635.813	182.229	25.164
7101	7101-1977	520.577	170.825	41.961
7102	7102-1978	-33.112	-2.452	4.398
7103	7103-1978	-34.066	1.868	9.839
7104	7104-1978	376.110	153.626	64.228
7125	7125-1985	26.035	-17.461	-29.387
7130	7130-1985	15.577	25.904	25.854
7889	7889-1981	14.413	26.236	26.367
7899	7899-1980	645.036	181.778	22.412
7917	"X"	-45.727	56.218	89.616

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
7064	----	22.818	-27.702	-1.217
7125	7125-1985	-37.271	21.370	-0.683
7130	7130-1985	33.731	21.071	-0.560

-- MONUMENT INFORMATION --

(Continued)

Site Number: 39
Current Site Name: GREENBELT
Location: GORF, GSFC, GREENBELT, MD

Monument Number: 7106
Type of Monument: UNKNOWN
Monument Inscription: NONE
Systems Using Monument: 48-INCH TELESCOPE HOUSED IN DOME

Latitude:
Longitude:
Elevation Above MSL (Geoid):
Height Above Ellipsoid:
Survey Source/Date Reported:
Datum/Ellipsoid:

Comments: GEODETIC COORDINATES NOT AVAILABLE YET FOR THIS OPTICAL TESTING FACILITY.

Differential Coordinates FROM Observing Monument 7106 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 39
Current Site Name: GREENBELT
Location: GORF, GSFC, GREENBELT, MD

Monument Number: 7125
Type of Monument: STANDARD NASA DISK
Monument Inscription: 7125-1985
Systems Using Monument: MTLRS

Latitude: N 39 01' 12.54303''
Longitude: W 76 49' 39.91582''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 49.663 meters
Survey Source/Date Reported: NGS HAVAGO 3/3/86/01-APR-85
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS PAD HAS THE FOUR ADDITIONAL MONUMENTS REQUIRED BY THE
MTLRS EUROPEAN LASER.

Differential Coordinates FROM Observing Monument 7125 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7064	----	-56.498	26.056	46.348
7105	7105-1981	-26.035	17.461	29.387
7130	7130-1985	-10.458	43.364	55.241

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
7064	----	60.089	-49.073	-0.535
7105	7105-1981	37.271	-21.370	0.683
7130	7130-1985	71.002	-0.299	0.123

-- MONUMENT INFORMATION --

(Continued)

Site Number: 39
Current Site Name: GREENBELT
Location: GORF, GSFC, GREENBELT, MD

Monument Number: 7130
Type of Monument: STANDARD NASA DISK
Monument Inscription: 7130-1985
Systems Using Monument: TLRS-2

Latitude: N 39 01' 14.84550''
Longitude: W 76 49' 39.92832''
Elevation Above MSL (Geoid): 52.488 meters
Height Above Ellipsoid: 49.786 meters
Survey Source/Date Reported: BFEC/NGS HAVAGO/01-SEP-85
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS MONUMENT REPLACES MONUMENT 7889. A TEMPORARY CEMENT PEDESTAL HAS BEEN PLACED OVER THIS MONUMENT FOR TLRS-2.

Differential Coordinates FROM Observing Monument 7130 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7064	----	-46.040	-17.308	-8.893
7105	7105-1981	-15.577	-25.904	-25.854
7125	7125-1985	10.458	-43.364	-55.241

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
7064	----	-10.913	-48.774	-0.658
7105	7105-1981	-33.731	-21.071	0.559
7125	7125-1985	-71.002	0.299	-0.124

-- MONUMENT INFORMATION --

(Continued)

Site Number: 39
Current Site Name: GREENBELT
Location: GORF, GSFC, GREENBELT, MD

Monument Number: 7807
Type of Monument: STEEL PLATE
Monument Inscription: "X"
Systems Using Monument: SAO

Latitude: N 39 01' 10.175''
Longitude: W 76 49' 39.486''
Elevation Above MSL (Geoid): 47.542 meters
Height Above Ellipsoid: 48.642 meters
Survey Source/Date Reported: BFEC/14-SEP-84
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS MONUMENT NUMBER WAS CHANGED TO 7917 TO ACCOMMODATE THE
SAO-3 COMPUTER SOFTWARE.

Differential Coordinates FROM Observing Monument 7807 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 39
Current Site Name: GREENBELT
Location: GORF, GSFC, GREENBELT, MD

Monument Number: 7889
Type of Monument: STANDARD NASA DISK
Monument Inscription: 7889-1981
Systems Using Monument: TLRS

Latitude: N 39 01' 14.8705''
Longitude: W 76 49' 39.9725''
Elevation Above MSL (Geoid): 52.359 meters
Height Above Ellipsoid: 53.46 meters
Survey Source/Date Reported: NASA-GSFC-BFEC, CODE 853/01-JUL-81
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS MONUMENT WAS DESTROYED DURING THE CONSTRUCTION OF A NEW
TLRS/MTLRS/MV OBSERVING PAD FOR MONUMENT 7130.

Differential Coordinates FROM Observing Monument 7889 TO
Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7063	----	-19.360	-43.398	-45.492
7064	----	-44.872	-17.634	-9.415
7065	----	-42.821	-26.727	-20.921
7083	----	-41.392	-33.242	-29.154
7100	7100-1977	621.400	155.993	-1.203
7101	7101-1977	506.164	144.589	15.594
7102	7102-1978	-47.525	-28.688	-21.969
7103	7103-1978	-48.479	-24.368	-16.528
7104	7104-1978	361.697	127.390	37.861
7105	7105-1981	-14.413	-26.236	-26.367
7899	7899-1980	630.623	155.542	-3.955

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --

-- MONUMENT INFORMATION --

(Continued)

Site Number: 39
Current Site Name: GREENBELT
Location: GORF, GSFC, GREENBELT, MD

Monument Number: 7899
Type of Monument: STANDARD NASA DISK
Monument Inscription: 7899-1980
Systems Using Monument: TLRS

Latitude: N 39 01' 14.9281''
Longitude: W 76 49' 12.9747''
Elevation Above MSL (Geoid): 43.885 meters
Height Above Ellipsoid: 45.0 meters
Survey Source/Date Reported: NASA-GSFC-BFEC, CODE 853/01-FEB-80
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS MONUMENT WAS PLACED ON THE PAD CONTAINING 7104 TO
ACCOMMODATE TLRS-1 FOR ITS INITIAL FIELD TEST.

Differential Coordinates FROM Observing Monument 7899 TO
Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7063	----	-649.983	-198.940	-41.537
7064	----	-675.495	-173.176	-5.460
7065	----	-673.444	-182.269	-16.966
7083	----	-672.015	-188.784	-25.199
7100	7100-1977	-9.223	0.451	2.752
7101	7101-1977	-124.459	-10.953	19.549
7102	7102-1978	-678.148	-184.230	-18.014
7103	7103-1978	-679.102	-179.910	-12.573
7104	7104-1978	-268.926	-28.152	41.816
7105	7105-1981	-645.036	-181.778	-22.412
7889	7889-1981	-630.623	-155.542	3.955

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --

-- MONUMENT INFORMATION --

(Continued)

Site Number: 39
Current Site Name: GREENBELT
Location: GORF, GSFC, GREENBELT, MD

Monument Number: 7917
Type of Monument: STEEL PLATE
Monument Inscription: "X"
Systems Using Monument: SAO-3

Latitude: N 39 01' 10.175''
Longitude: W 76 49' 39.486''
Elevation Above MSL (Geoid): 47.542 meters
Height Above Ellipsoid: 48.642 meters
Survey Source/Date Reported: BFEC/01-JUL-84
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: PREVIOUSLY MONUMENT NUMBER 7807.

Differential Coordinates FROM Observing Monument 7917 TO
Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7105	7105-1981	45.727	-56.218	-89.161

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --

-- MONUMENT INFORMATION --

(Continued)

Site Number: 39
Current Site Name: GREENBELT
Location: GORF, GSFC, GREENBELT, MD

Monument Number: 7918
Type of Monument: STANDARD NASA DISK
Monument Inscription: NONE
Systems Using Monument: TLRS-3

Latitude: N 39 01' 14.15905''
Longitude: W 76 49' 41.3391''
Elevation Above MSL (Geoid): 52.560 meters
Height Above Ellipsoid: 49.860 meters
Survey Source/Date Reported: BFEC/07-APR-86
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS IS THE FIELD TEST SITE FOR THE TLRS-3 SYSTEM.

Differential Coordinates FROM Observing Monument 7918 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 39
Current Site Name: GREENBELT
Location: GORF, GSFC, GREENBELT, MD

Monument Number: 7919
Type of Monument: STANDARD NASA DISK
Monument Inscription: NONE
Systems Using Monument: TLRS-4

Latitude: N 39 01' 14.54069''
Longitude: W 76 49' 41.88748''
Elevation Above MSL (Geoid): 51.837 meters
Height Above Ellipsoid: 49.137 meters
Survey Source/Date Reported: BFEC/01-AUG-85
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS IS THE FIELD TEST SITE FOR THE TLRS-4 SYSTEM.

Differential Coordinates FROM Observing Monument 7919 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 39
Current Site Name: GREENBELT
Location: GORF, GSFC, GREENBELT, MD

Monument Number: 7920
Type of Monument: STANDARD NASA DISK
Monument Inscription: 7125-B
Systems Using Monument: TLRS-1

Latitude: N 39 01' 12.50034''
Longitude: W 76 49' 40.08850''
Elevation Above MSL (Geoid): 52.368 meters
Height Above Ellipsoid: 49.667 meters
Survey Source/Date Reported: BFEC/NGS HAVAGO ADJUSTMENT 3-3-86/24-OCT-86
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: TLRS-1 OCCUPIED THIS MTLRS MONUMENT BECAUSE THE SYSTEM COULD NOT FIT OVER THE 7125 OBSERVING MONUMENT.

Differential Coordinates FROM Observing Monument 7920 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

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OF POOR QUALITY

Site Number: 39
Current Site Name: GREENBELT
Location: GORF, GSFC, GREENBELT, MD

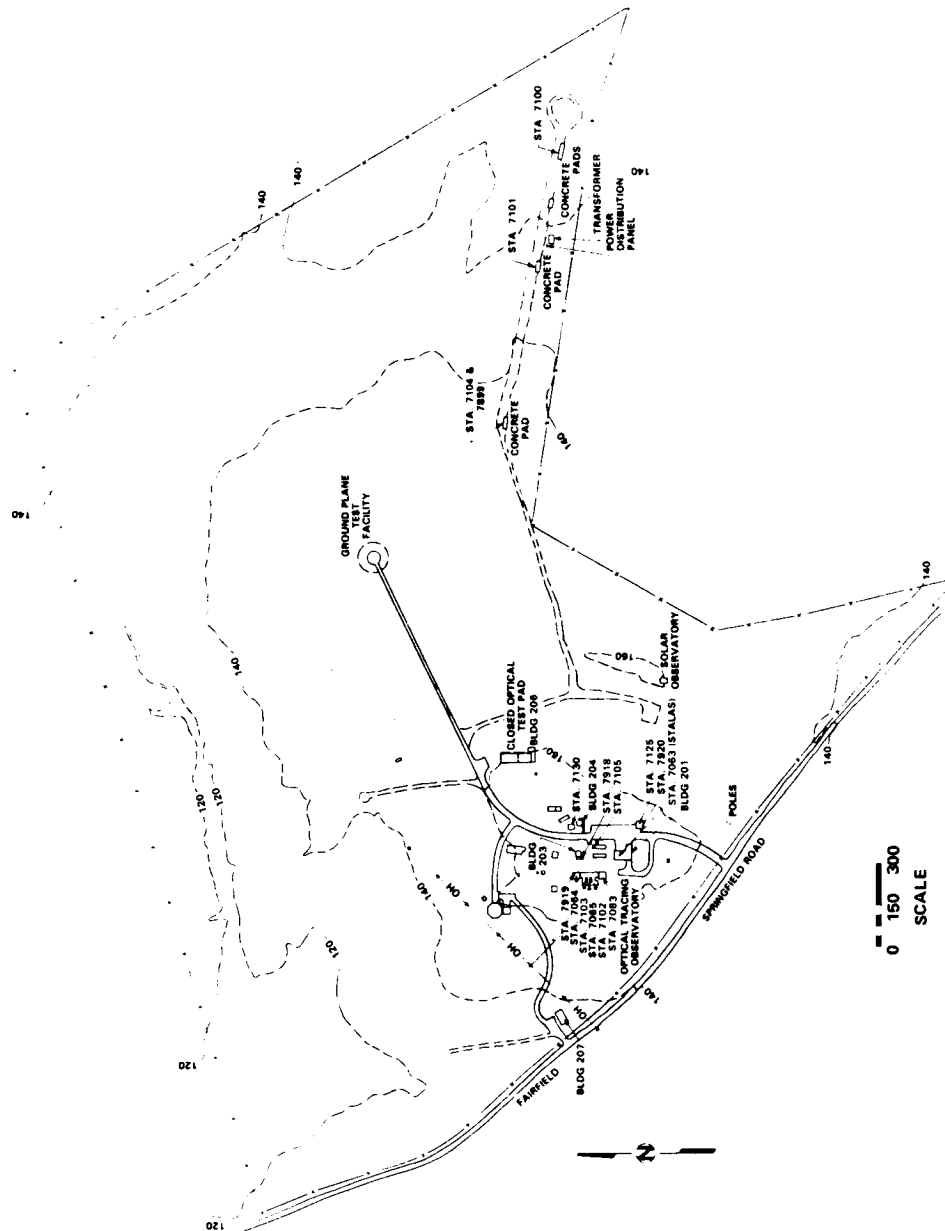


Figure 4-GSFC. GREENBELT Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 39
 Current Site Name: GREENBELT
 Location: GORF, GSFC, GREENBELT, MD

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7063	STALAS	70632101	01-MAY-76	28-AUG-81	YES
7064	MOBLAS-1	70640101	01-OCT-73	30-JUN-74	YES
7064	MOBLAS-1	70640102	21-OCT-77	28-NOV-77	YES
7065	MOBLAS-2	70650201	01-OCT-73	30-JUN-74	YES
7065	MOBLAS-3	70650302	01-AUG-75	09-JUL-76	YES
7065	MOBLAS-2	70650203	17-OCT-77	21-NOV-77	YES
7083	MOBLAS-3	70830301	01-JAN-75	15-JUN-75	YES
7100	MOBLAS-3	71000301	16-AUG-77	18-NOV-77	YES
7100	MOBLAS-4	71000402	01-MAR-78	13-OCT-78	YES
7101	MOBLAS-8	71010801	01-AUG-78	30-MAY-79	YES
7101	MOBLAS-6	71010602	01-FEB-82	01-JUN-82	YES
7102	MOBLAS-5	71020501	01-APR-78	17-MAY-79	YES
7102	MOBLAS-4	71020402	15-MAY-79	15-NOV-82	YES
7102	MOBLAS-4	71020403	01-DEC-82	31-MAR-83	YES
7102	MOBLAS-4	71020404	01-APR-83	31-JUL-83	YES
7102	MOBLAS-3	71020305	01-DEC-84	---	YES
7103	MOBLAS-6	71030601	15-MAY-78	10-MAY-79	YES
7103	MOBLAS-6	71030602	08-JUN-82	02-NOV-82	YES
7104	MOBLAS-7	71040701	01-JUL-78	04-JUN-79	YES
7105	MOBLAS-7	71050701	01-JAN-81	15-JUN-81	YES
7105	MOBLAS-7	71050702	16-JUN-81	01-FEB-83	YES
7105	MOBLAS-7	71050703	01-FEB-83	22-AUG-83	NO
7105	MOBLAS-7	71050704	22-AUG-83	22-MAR-84	NO
7105	MOBLAS-7	71050705	22-MAR-84	07-MAY-85	NO
7105	TLRS-2	71051206	01-MAR-85	23-JUL-85	YES
7105	MOBLAS-2	71050207	29-MAR-85	03-JUL-85	YES
7105	MOBLAS-7	71050708	07-MAY-85	29-JUL-85	NO
7105	MOBLAS-7	71050709	29-JUL-85	27-MAR-86	NO
7105	MOBLAS-7	71050710	31-MAR-86	06-DEC-86	NO
7105	MOBLAS-7	71050711	06-DEC-86	---	NO
7125	MTLRS-1	71251501	01-MAY-85	23-JUL-85	YES
7130	TLRS-2	71301201	06-NOV-85	19-MAY-87	YES
7889	TLRS-2	78891201	01-MAY-82	20-DEC-82	YES
7889	TLRS-3	78891302	01-NOV-84	01-AUG-85	YES
7889	TLRS-2	78891203	01-AUG-85	15-OCT-85	YES
7899	TLRS-1	78991101	29-FEB-80	21-MAY-80	YES
7899	TLRS-1	78991102	18-AUG-80	10-OCT-80	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 39
Current Site Name: GREENBELT
Location: GORF, GSFC, GREENBELT, MD

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7917	SAO-3	79174201	01-SEP-84	31-DEC-85	YES
7918	TLRS-3	79181301	22-AUG-85	08-JUL-86	YES
7918	TLRS-3	79181302	11-FEB-87	15-SEP-87	YES
7919	TLRS-4	79191401	18-NOV-85	02-APR-87	YES
7920	TLRS-1	79201101	29-JUL-85	15-JAN-86	YES
7920	TLRS-1	79201102	16-JAN-86	19-DEC-86	YES
7920	TLRS-1	79201103	21-DEC-86	20-JAN-87	YES
7920	TLRS-1	79201104	21-JAN-87	06-FEB-87	YES
7920	TLRS-3	79201305	15-SEP-87	---	NO

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 90

Current Site Name: HALEAKALA

Other Site Name:

Location: LURE OBS., MOUNT HALEAKALA, MAUI, HI

Geographic Region: PACIFIC

Tectonic Plate: PACIFIC

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, INTERNAL PLATE DEFORMATION, PLATE STABILITY, AND POLAR MOTION/EARTH ROTATION.

Site Description: THE STATION IS LOCATED ON THE ISLAND OF MAUI IN THE HAWAIIAN ISLAND CHAIN. THE FIXED LASER (HOLLAS) IS LOCATED IN THE LURE OBSERVATORY ON MOUNT HALEAKALA. A NEARBY PAD IS COMPATIBLE FOR THE MOBLAS-1 SYSTEM ONLY. THE PAD WAS OCCUPIED IN 1980 AFTER A STORM RENDERED THE OBSERVATORY INOPERABLE. THIS PAD WAS THEN USED FOR COLLOCATION TESTING BETWEEN HOLLAS AND MOBLAS-1.

Site Topo Map: KILOHANA, HAWAII. 1957, 7.5 QUAD, U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: THE HAWAIIAN ARCHIPELAGO

Local Geology: AA BASALTIC FLOWS. HALEAKALA IS THE MORE EASTERLY AND YOUNGER OF THE TWO VOLCANIC MOUNTAINS THAT MAKE UP THE ISLAND OF MAUI. ITS LAVAS OVERLAP THOSE OF THE WEST MAUI VOLCANO AND MAKE UP THE ISTHMUS THAT CONNECTS THE TWO MOUNTAINS.

Comments: NONE

C-3

-- MONUMENT INFORMATION --

Site Number: 90
Current Site Name: HALEAKALA
Location: LURE OBS., MOUNT HALEAKALA, MAUI, HI
Number of Observing Monuments: 2
Surveyed into National Network? YES

Monument Number: 7120
Type of Monument: STANDARD NASA DISK
Monument Inscription: MOBLAS STA 7120-1980
Systems Using Monument: MOBLAS-1

Latitude: N 20 42' 38.8505''
Longitude: W 156 15' 31.8427''
Elevation Above MSL (Geoid): 3048.353 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: NASA-GSFC-BFEC/15-AUG-80
Datum/Ellipsoid: OLD HAWAIIAN/CLARKE 1866

Comments: THIS MONUMENT WAS OCCUPIED ON A TEMPORARY BASIS UNTIL THE
OBSERVATORY REGAINED ITS OPERATIONS AFTER A SEVERE STORM.

Differential Coordinates FROM Observing Monument 7120 TO
Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7210	----	-8.014	-19.410	-40.927

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
7210	----	-43.639	14.540	-0.403

-- MONUMENT INFORMATION --

(Continued)

Site Number: 90
Current Site Name: HALEAKALA
Location: LURE OBS., MOUNT HALEAKALA, MAUI, HI

Monument Number: 7210
Type of Monument: CARRIAGE BOLT
Monument Inscription: NONE
Systems Using Monument: HOLLAS FIXED LASER

Latitude: N 20 42' 37.43208''
Longitude: W 156 15' 31.34046''
Elevation Above MSL (Geoid): 3047.950 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: NGS/15-AUG-80
Datum/Ellipsoid: OLD HAWAIIAN/CLARKE 1866

Comments: THE SURVEY TABLET WAS USED TO REFERENCE THE FIXED LASER IN
THE LURE OBSERVATORY.

Differential Coordinates FROM Observing Monument 7210 TO
Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7120	MOBLAS STA 7120-1980	8.014	19.410	40.927

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
7120	MOBLAS STA 7120-1980	43.639	-14.540	0.403

-- SITE SKETCH --

Site Number: 90
Current Site Name: HALEAKALA
Location: LURE OBS., MOUNT HALEAKALA, MAUI, HI

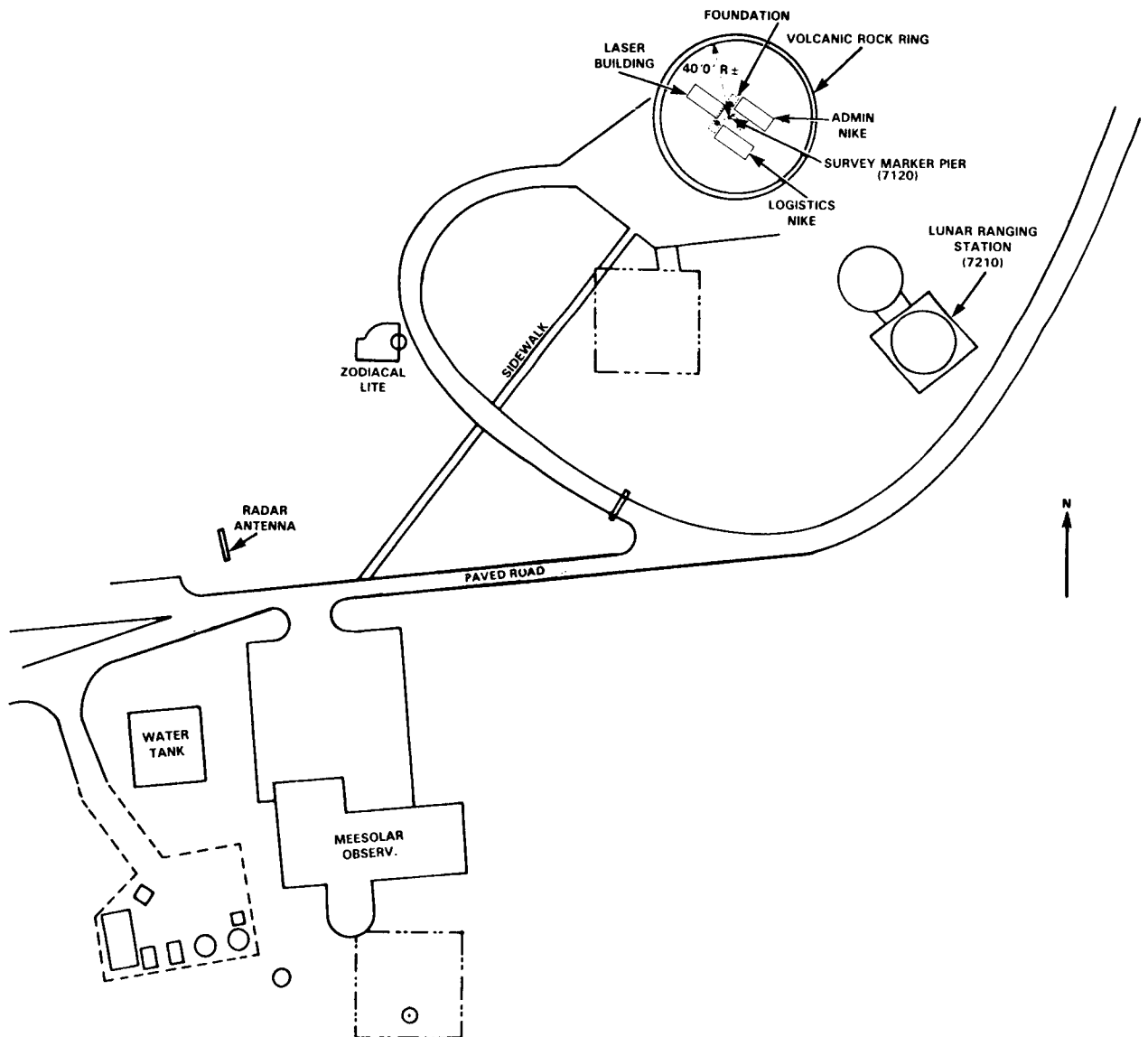


Figure 4-HALEAK. HALEAKALA Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 90
Current Site Name: HALEAKALA
Location: LURE OBS., MOUNT HALEAKALA, MAUI, HI

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7120	MOBLAS-1	71200101	15-JUN-80	22-JAN-82	YES
7210	HALEAKALA	72102301	01-MAY-76	31-MAR-84	YES
7210	HALEAKALA	72102302	01-APR-84	16-JUL-87	YES
7210	HALEAKALA	72102303	17-JUL-87	---	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
--------------------	---------------------	--------------------------	------------------	----------------	-----------------

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 714

Current Site Name: HAT CREEK

Other Site Name:

Location: HAT CREEK RADIO ASTRO. OBS., CASSEL, CA

Geographic Region: CALIFORNIA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE STABILITY, INTERNAL PLATE DEFORMATION, AND REGIONAL DEFORMATION.

Site Description: THE SITE IS LOCATED IN NORTHERN CALIFORNIA AT THE HAT CREEK RADIO OBSERVATORY WHICH IS OWNED BY THE UNIVERSITY OF CALIFORNIA AT BERKELEY. ONE FIXED 26-METER RADIO TELESCOPE IS USED FOR VLBI MEASUREMENTS.

Site Topo Map: BURNEY, CALIFORNIA. 1957, U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: CASCADE RANGES

Local Geology: PLEISTOCENE VOLCANICS

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 714
 Current Site Name: HAT CREEK
 Location: HAT CREEK RADIO ASTRO. OBS., CASSEL, CA
 Number of Observing Monuments: 1
 Surveyed into National Network? NO

Monument Number: 7218
 Type of Monument: INTERSECTION OF AXIS OF THE ANTENNA
 Monument Inscription: NONE
 Systems Using Monument: 26-METER (85-FOOT) FIXED RADIO TELESCOPE

Latitude: N 40 49' 02.82943''
 Longitude: W 121 28' 09.88898''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 1013.138 meters
 Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/16-MAR-87
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7218 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 87-03-16

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	RIM 1948	3471.340	-3323.450	-378.242
--	BRIDGE 1948	-861.907	-6997.155	-7220.464
--	DOYLE 1948	-4191.987	7745.539	5016.219
--	HAT CREEK NCMN C	-67.710	-3.373	-66.912
--	HAT CREEK NCMN A	130.605	21.628	77.640
--	HAT CREEK NCMN B	97.976	-73.582	-33.494
--	SOUTH ALIGNMENT PIER	-6.004	-9.851	-33.632
--	HAT CREEK NCMN E			
--	HAT CREEK NCMN D	-39.544	61.044	18.108

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	HAT CREEK NCMN C	-75.623	-55.992	-14.810
--	SOUTH ALIGNMENT PIER	-32.993	0.021	-13.252
--	HAT CREEK NCMN E	-0.000	0.000	-14.942
--	HAT CREEK NCMN D	34.244	-65.595	-11.946

-- SITE SKETCH --

Site Number: 714
Current Site Name: HAT CREEK
Location: HAT CREEK RADIO ASTRO. OBS., CASSEL, CA

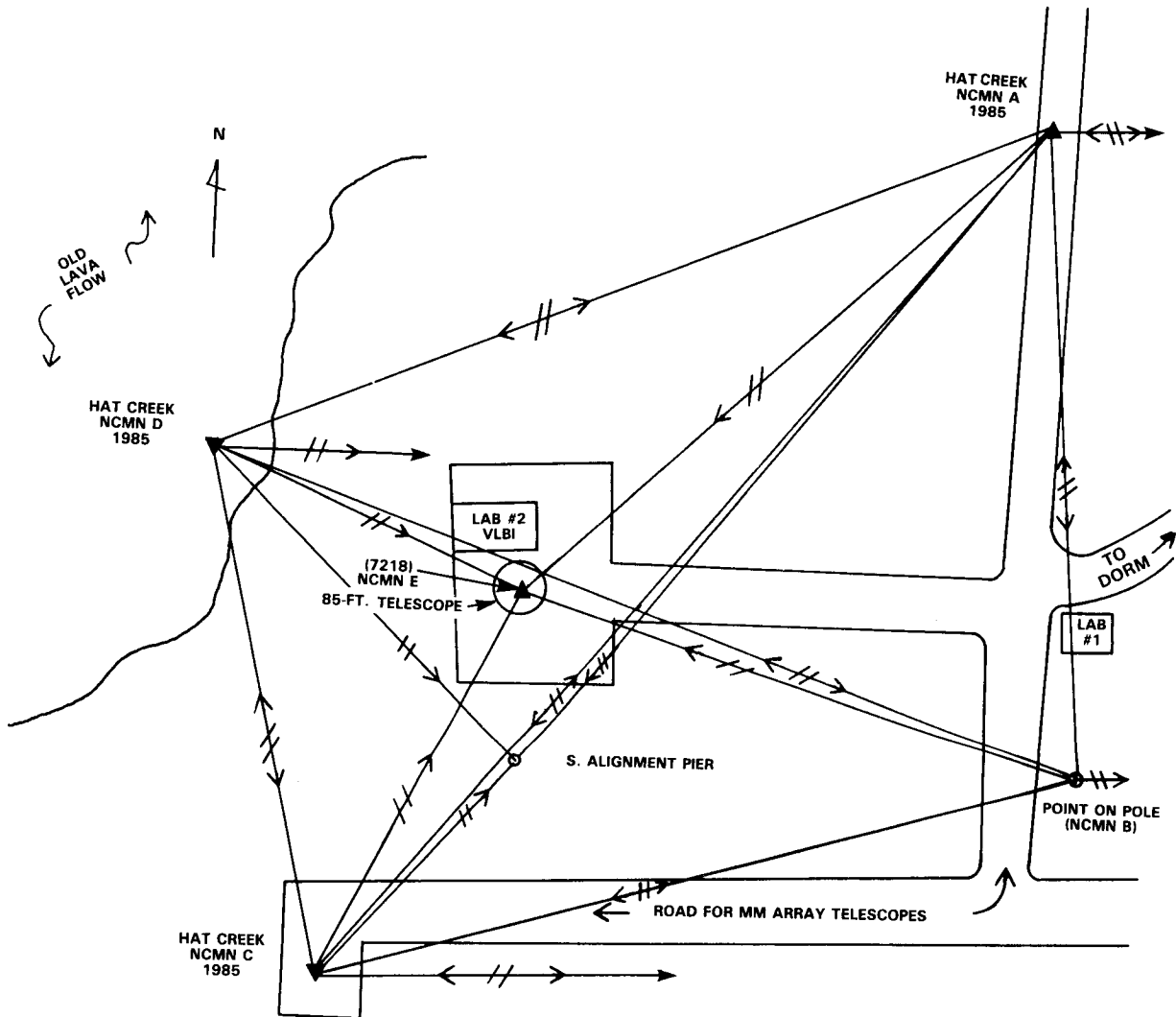


Figure 4-HAT CR. HAT CREEK Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 714
 Current Site Name: HAT CREEK
 Location: HAT CREEK RADIO ASTRO. OBS., CASSEL, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
--------------------	---------------------	--------------------------	------------------	----------------	-----------------

-- No Previous Occupations --

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7218	TVDS-3	72189301	06-JUN-83	07-JUN-83	YES
7218	TVDS-3	72189301	07-JUN-83	07-JUN-83	YES
7218	TVDS-3	72189301	08-JUN-83	08-JUN-83	YES
7218	TVDS-3	72189301	09-JUN-83	09-JUN-83	YES
7218	TVDS-3	72189301	10-JUN-83	10-JUN-83	YES
7218	TVDS-3	72189301	27-JUN-83	28-JUN-83	YES
7218	TVDS-3	72189301	29-JUN-83	30-JUN-83	YES
7218	TVDS-3	72189301	23-FEB-84	24-FEB-84	YES
7218	TVDS-3	72189301	24-FEB-84	26-FEB-84	YES
7218	TVDS-3	72189301	26-FEB-84	27-FEB-84	YES
7218	TVDS-3	72189301	12-APR-84	12-APR-84	YES
7218	TVDS-3	72189301	17-APR-84	17-APR-84	YES
7218	TVDS-3	72189301	21-APR-84	22-APR-84	YES
7218	TVDS-3	72189301	25-APR-84	25-APR-84	YES
7218	TVDS-3	72189301	26-APR-84	26-APR-84	YES
7218	TVDS-1	72189101	07-JUL-84	08-JUL-84	YES
7218	TVDS-1	72189101	01-MAR-85	02-MAR-85	YES
7218	TVDS-1	72189101	10-MAR-85	11-MAR-85	YES
7218	TVDS-1	72189101	13-MAR-85	14-MAR-85	YES
7218	TVDS-1	72189101	07-MAY-85	07-MAY-85	YES
7218	TVDS-1	72189101	15-MAY-85	15-MAY-85	YES
7218	TVDS-1	72189101	30-SEP-85	30-SEP-85	YES
7218	TVDS-1	72189101	26-MAR-86	26-MAR-86	YES
7218	TVDS-1	72189101	30-MAR-86	30-MAR-86	YES
7218	TVDS-1	72189101	01-APR-86	01-APR-86	YES
7218	TVDS-1	72189101	02-APR-86	02-APR-86	YES
7218	TVDS-1	72189101	06-APR-86	06-APR-86	YES
7218	TVDS-1	72189101	07-APR-86	07-APR-86	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 714
 Current Site Name: HAT CREEK
 Location: HAT CREEK RADIO ASTRO. OBS., CASSEL, CA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7218	TVDS-1	72189101	08-APR-86	08-APR-86	YES
7218	TVDS-1	72189101	21-MAY-86	21-MAY-86	YES
7218	TVDS-1	72189101	18-OCT-86	18-OCT-86	YES
7218	TVDS-1	72189101	19-OCT-86	19-OCT-86	YES
7218	TVDS-1	72189101	23-OCT-86	23-OCT-86	YES
7218	TVDS-1	72189101	27-OCT-86	27-OCT-86	YES
7218	TVDS-1	72189101	29-OCT-86	29-OCT-86	YES
7218	TVDS-1	72189101	31-OCT-86	31-OCT-86	YES
7218	TVDS-1	72189101	10-DEC-86	10-DEC-86	YES
7218	TVDS-1	72189101	11-DEC-86	11-DEC-86	YES
7218	TVDS-1	72189101	03-FEB-87	03-FEB-87	NO
7218	TVDS-1	72189101	06-FEB-87	06-FEB-87	NO
7218	TVDS-1	72189101	09-FEB-87	09-FEB-87	NO
7218	TVDS-1	72189101	22-MAR-87	22-MAR-87	NO
7218	TVDS-1	72189101	24-MAR-87	24-MAR-87	NO
7218	TVDS-1	72189101	01-MAY-87	01-MAY-87	NO
7218	TVDS-1	72189101	06-MAY-87	06-MAY-87	NO
7218	TVDS-1	72189101	10-MAY-87	10-MAY-87	NO
7218	TVDS-1	72189101	14-MAY-87	14-MAY-87	NO
7218	TVDS-1	72189101	17-MAY-87	17-MAY-87	NO
7218	TVDS-1	72189101	21-MAY-87	21-MAY-87	NO
7218	TVDS-1	72189101	15-JUL-87	15-JUL-87	NO
7218	TVDS-1	72189101	18-JUL-87	18-JUL-87	NO
7218	TVDS-1	72189101	23-JUL-87	23-JUL-87	NO
7218	TVDS-1	72189101	25-JUL-87	25-JUL-87	NO
7218	TVDS-1	72189101	28-JUL-87	28-JUL-87	NO
7218	TVDS-1	72189101	01-AUG-87	01-AUG-87	NO
7218	TVDS-1	72189101	03-AUG-87	03-AUG-87	NO
7218	TVDS-1	72189101	07-AUG-87	07-AUG-87	NO
7218	TVDS-1	72189101	09-AUG-87	09-AUG-87	NO
7218	TVDS-1	72189101	11-AUG-87	11-AUG-87	NO
7218	TVDS-1	72189101	13-AUG-87	13-AUG-87	NO
7218	TVDS-1	72189101	15-AUG-87	15-AUG-87	NO
7218	TVDS-1	72189101	18-OCT-87	18-OCT-87	NO
7218	TVDS-1	72189101	19-OCT-87	19-OCT-87	NO

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 714
Current Site Name: HAT CREEK
Location: HAT CREEK RADIO ASTRO. OBS., CASSEL, CA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7218	TVDS-1	72189101	21-OCT-87	21-OCT-87	NO
7218	TVDS-1	72189101	24-OCT-87	24-OCT-87	NO
7218	TVDS-1	72189101	25-OCT-87	25-OCT-87	NO
7218	TVDS-1	72189101	27-OCT-87	27-OCT-87	NO
7218	TVDS-1	72189101	28-OCT-87	28-OCT-87	NO
7218	TVDS-1	72189101	29-OCT-87	29-OCT-87	NO
7218	TVDS-1	72189101	31-OCT-87	31-OCT-87	NO
7218	TVDS-1	72189101	04-DEC-87	04-DEC-87	NO
7218	TVDS-1	72189101	05-DEC-87	05-DEC-87	NO

-- SITE INFORMATION --

Site Number: 650

Current Site Name: HELWAN

Other Site Name:

Location: HELWAN, EGYPT

Geographic Region: MEDITERRANEAN

Tectonic Plate: AFRICAN

-- Site Information Not Yet Available --

-- SITE INFORMATION --

Site Number: 880

Current Site Name: HERSTMONCEUX

Other Site Name:

Location: ROYAL GREENWICH OBS., GREAT BRITAIN

Geographic Region: EUROPE

Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION GLOBAL PLATE MOTION, INTERNAL PLATE DEFORMATION/PLATE STABILITY, AND POLAR MOTION/EARTH ROTATION.

Site Description: THE STATION IS LOCATED AT THE ROYAL GREENWICH OBSERVATORY, HERSTMONCEUX, GREAT BRITAIN. A FIXED SATELLITE LASER RANGING SYSTEM, YIELDING RANGES WITH A SINGLE-SHOT PRECISION OF ABOUT 5 CENTIMETERS, HAS BEEN OPERATING AT HERSTMONCEUX SINCE MARCH 1983.

Site Topo Map: ROYAL GREENWICH OBSERVATORY. SCALE 1:2500. R.G.O. HERSTMONCEUX CASTLE R2064/1. CROWN COPYRIGHT 1971.

-- GEOLOGICAL INFORMATION --

Geological Province: NONE

Local Geology: THE SITE AREA IS BOUNDED ON THE SOUTH BY OLD, BUT NOW DRAINED, MARSHLAND WITH THE ENGLISH CHANNEL ABOUT SIX KILOMETERS AWAY. THE UNDERLYING STRUCTURE IS INTERBEDDED CLAYS AND SANDSTONES CALLED THE HASTINGS BEDS. THERE IS NO HISTORY OF SEISMIC ACTIVITY IN THE AREA.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 880
 Current Site Name: HERSTMONCEUX
 Location: ROYAL GREENWICH OBS., GREAT BRITAIN
 Number of Observing Monuments: 1
 Surveyed into National Network? YES

Monument Number: 7840
 Type of Monument: INTERSECTION OF AXES
 Monument Inscription: NONE
 Systems Using Monument: FIXED LASER

Latitude: N 50 52' 00.45266''
 Longitude: E 00 20' 15.81818''
 Elevation Above MSL (Geoid): 30.680 meters
 Height Above Ellipsoid: 30.680 meters
 Survey Source/Date Reported: ORDNANCE SURVEY OF GREAT BRITAIN/01-JAN-81
 Datum/Ellipsoid: OSGB 70/AIRY SPHEROID

Comments: THE COORDINATES ARE IDENTICAL IN OSGB 36, OSGB 70(SN) AND OS(SN)80 NETWORKS. THE GEOID/SPHEROID SEPARATION IS 0.

Differential Coordinates FROM Observing Monument 7840 TO
 Reference Monuments and Other Observing Monuments

Data Source: OSGB

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	OSGB PRIMARY PILLAR PP481 (M 002)	122.166	588.590	-99.204

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 880
Current Site Name: HERSTMONCEUX
Location: ROYAL GREENWICH OBS., GREAT BRITAIN

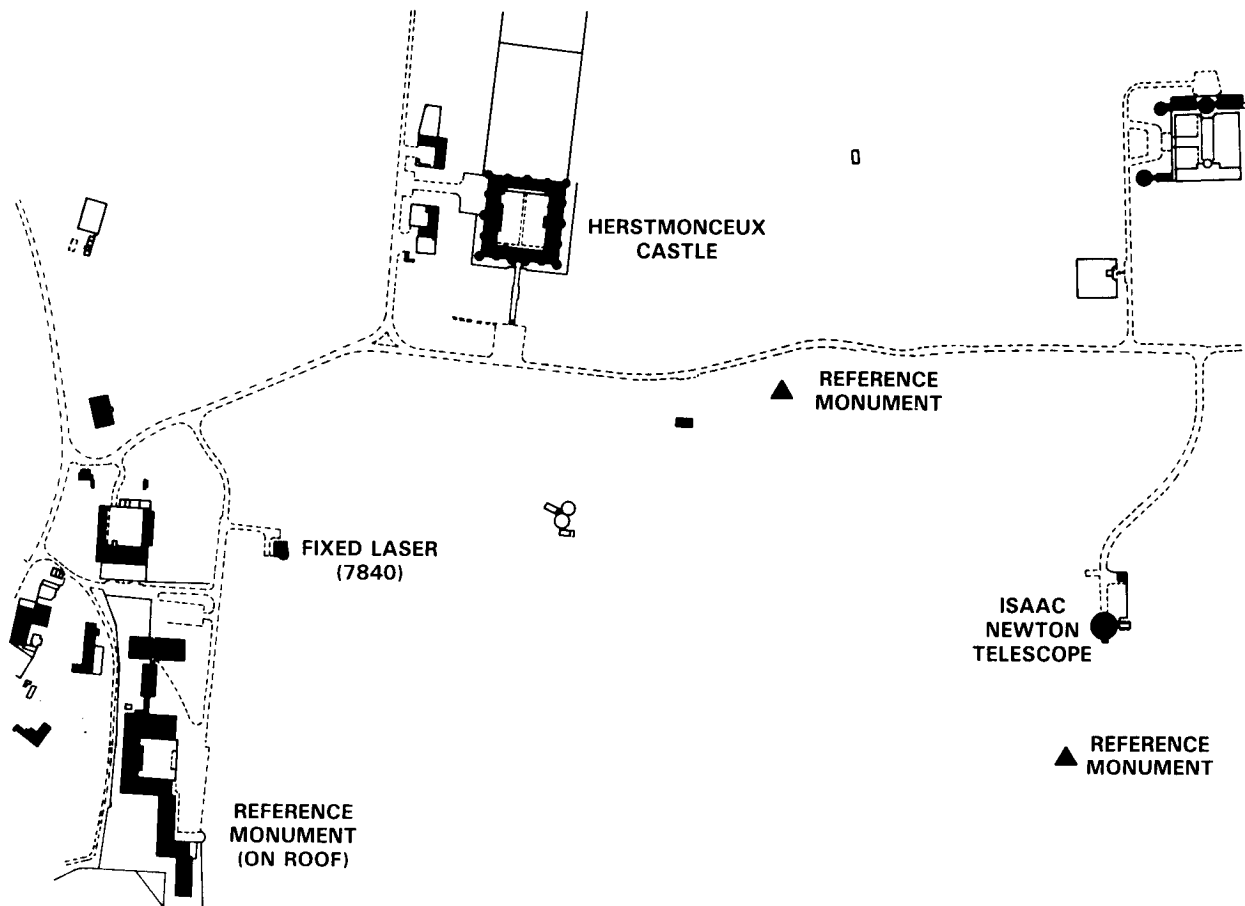


Figure 4-HRSTMN. HERSTMONCEUX Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 880
Current Site Name: HERSTMONCEUX
Location: ROYAL GREENWICH OBS., GREAT BRITAIN

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7840	RGOLAS	78403501	01-OCT-83	---	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-- No Previous Occupations --					

-- SITE INFORMATION --

Site Number: 92

Current Site Name: HUAHINE

Other Site Name: TAHITI

Location: HUAHINE, SOCIETY IS, FRENCH POLYNESIA

Geographic Region: PACIFIC

Tectonic Plate: PACIFIC

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, PLATE STABILITY, AND POLAR MOTION/EARTH ROTATION.

Site Description: THE SITE IS LOCATED ON HUAHINE ISLAND, A PART OF THE SOCIETY ISLANDS IN THE SOUTH PACIFIC OCEAN, 106 MILES FROM TAHITI. THE LASER PAD IS LOCATED ON THE LAGOON SIDE OF THE ISLAND OFF COPRA ROAD BETWEEN THE OPTICAL STATION AND THE AIRPORT. A RAISED PIER WAS CONSTRUCTED TO ACCOMMODATE THE UPGRADED TLRS-2. IT IS HOUSED IN A BUILDING SPECIFICALLY DESIGNED FOR TLRS-2 OPERATIONS.

Site Topo Map: UNKNOWN

-- GEOLOGICAL INFORMATION --

Geological Province: SOCIETY ISLANDS; PACIFIC TECTONIC PLATE

Local Geology: BASALTIC LAVAS

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 92
Current Site Name: HUAHINE
Location: HUAHINE, SOCIETY IS, FRENCH POLYNESIA
Number of Observing Monuments: 1
Surveyed into National Network? YES

Monument Number: 7121
Type of Monument: STANDARD NASA DISK
Monument Inscription: 7121-1982
Systems Using Monument: MOBLAS-1

Latitude: S 16 44' 02.6102''
Longitude: W 151 02' 19.0520''
Elevation Above MSL (Geoid): 34.206 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: BFEC/01-DEC-82
Datum/Ellipsoid: 153D WEST MERIDIAN/INTERNATIONAL

Comments: THIS STATION HAD A PAD WITH THREE PEDESTALS FOR MOBLAS-1. A
MONUMENT FOR TLRs-2 HAS BEEN CONSTRUCTED OVER THIS MONUMENT.

Differential Coordinates FROM Observing Monument 7121 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 92
Current Site Name: HUAHINE
Location: HUAHINE, SOCIETY IS, FRENCH POLYNESIA

Monument Number: 7123
Type of Monument: STANDARD NASA DISK SET IN A 4' X 4' PIER
Monument Inscription: NONE
Systems Using Monument: TLRs-2

Latitude:
Longitude:
Elevation Above MSL (Geoid):
Height Above Ellipsoid:
Survey Source/Date Reported:
Datum/Ellipsoid:

Comments: THIS IS THE NEW MONUMENT THAT REPLACES 7121. IT IS
COMPATIBLE FOR OCCUPATION BY THE UPGRADED TLRs-2.

Differential Coordinates FROM Observing Monument 7123 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

ORIGINAL PAGE IS
OF POOR QUALITY

-- SITE SKETCH --

Site Number: 92
Current Site Name: HUAHINE
Location: HUAHINE, SOCIETY IS, FRENCH POLYNESIA

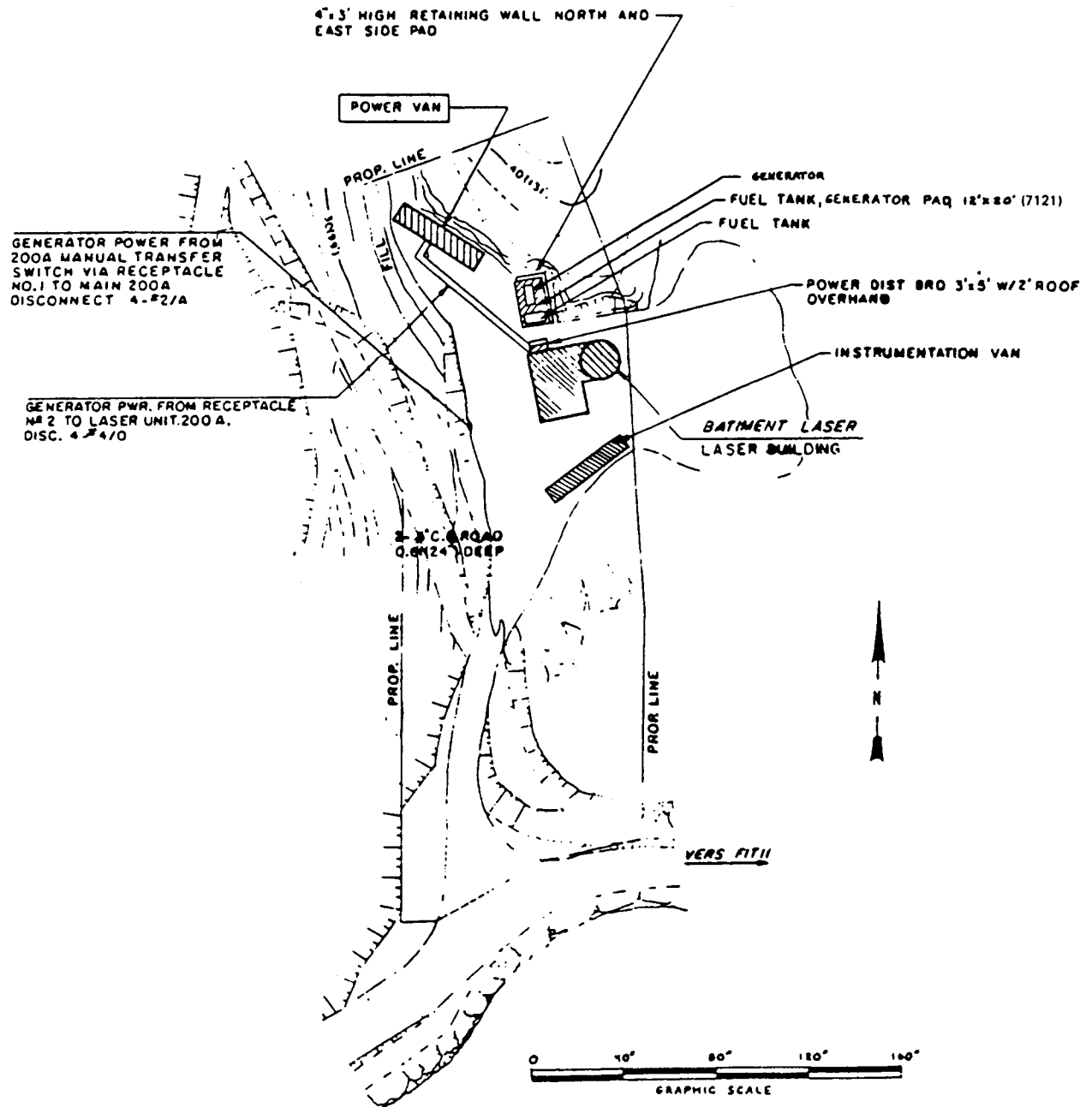


Figure 4-HUAHNE. HUAHINE Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 92
Current Site Name: HUAHINE
Location: HUAHINE, SOCIETY IS, FRENCH POLYNESIA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7121	MOBLAS-1	71210101	01-FEB-83	11-APR-86	YES
7123	TLRS-2	71231201	14-JUL-87	31-DEC-87	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
--------------------	---------------------	--------------------------	------------------	----------------	-----------------

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 891

Current Site Name: IQUIQUE

Other Site Name:

Location: IQUIQUE, CHILE

Geographic Region: SOUTH AMERICA

Tectonic Plate: SOUTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF GLOBAL PLATE MOTION, INTERNAL PLATE DEFORMATION, AND PLATE STABILITY

Site Description: THE SITE IS LOCATED ON THE COAST OF NORTHERN CHILE, 33 KILOMETERS FROM THE TRAFFIC CIRCLE AT THE FOOT OF THE CLIFF IN IQUIQUE. THE SITE IS IN FRONT OF POWER POLE NUMBER 162. A UNIVERSAL CONCRETE PAD IS LOCATED 500 METERS SOUTH OF THE ROAD FROM IQUIQUE TO THE PANAMERICAN HIGHWAY AT HUMBERSTONE. THE PAD IS EQUIPPED TO ACCOMMODATE TLRS, MTLRS, MOBLAS, OR ANY MOBILE VLBI SYSTEM.

Site Topo Map: UNKNOWN

-- GEOLOGICAL INFORMATION --

Geological Province: ANDEAN CORDILLERA

Local Geology: BEDROCK IS COMPOSED OF ALTERED VOLCANICS THAT ARE MORE COMPETENT THAN THE BRECCIAS. SOME HILLS AROUND THE SITE AREA ARE COMPOSED OF HARD SANDSTONES, SHALES, AND FINE-GRAIN LIMESTONE.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 891
Current Site Name: IQUIQUE
Location: IQUIQUE, CHILE
Number of Observing Monuments: 1
Surveyed into National Network? NO

Monument Number: 7402
Type of Monument: STANDARD NASA DISK
Monument Inscription: 7402
Systems Using Monument: TLRS

Latitude: S 20 13' 02.6842''
Longitude: W 69 54' 07.1840''
Elevation Above MSL (Geoid): 1096.980 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: BFEC/01-JAN-85
Datum/Ellipsoid: SOUTH AMERICAN DATUM 1956/HAYFORD
INTERNATIONAL 1924

Comments: NONE

Differential Coordinates FROM Observing Monument 7402 TO
Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 891
Current Site Name: IQUIQUE
Location: IQUIQUE, CHILE

-- Site Sketch Not Available --

Figure 4-IQUIQUE. IQUIQUE Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 891
Current Site Name: IQUIQUE
Location: IQUIQUE, CHILE

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- SITE INFORMATION --

Site Number: 675

Current Site Name: KARITSA
Other Site Name: IOANNINA
Location: KARITSA, GREECE
Geographic Region: MEDITERRANEAN
Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION AND THE KINEMATICS OF THE EAST AND CENTRAL MEDITERRANEAN.

Site Description: THIS WEGENER-MEDLAS SITE IS LOCATED APPROXIMATELY 20 KILOMETERS WEST OF THE CITY OF IOANNINA, GREECE AND CLOSE TO THE PERIMETER OF THE VILLAGE OF KARITSA. THE LASER PAD IS LOCATED IN A FIELD CLOSE TO THE ROAD JUST SOUTHEAST OF THE VILLAGE AND IS COMPATIBLE FOR OCCUPATION BY MTLRS-1 OR MTLRS-2.

Site Topo Map: KLIMATIA 1:50,000; AVAILABLE FROM THE HELLENIC MILITARY GEOGRAPHIC SERVICE, P. ATROS, ATHENS. TEL: 0030-1-884-2811.

-- GEOLOGICAL INFORMATION --

Geological Province: NONE

Local Geology: UPPER AND LOWER JUTASSIC SENONIAN LIMESTONES WITH ADJACENT MARBLES.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 675
Current Site Name: KARITSA
Location: KARITSA, GREECE
Number of Observing Monuments: 1
Surveyed into National Network? NO

Monument Number: 7520
Type of Monument: UNKNOWN
Monument Inscription: NONE
Systems Using Monument: MOBILE LASER RANGING SYSTEMS

Latitude: N 39.734193572
Longitude: E 20.664657551
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 601.770 meters
Survey Source/Date Reported: COORDINATES PROVIDED BY DR. DANNY VAN LOON/
01-AUG-87
Datum/Ellipsoid:

Comments: NONE

Differential Coordinates FROM Observing Monument 7520 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 675
Current Site Name: KARITSA
Location: KARITSA, GREECE

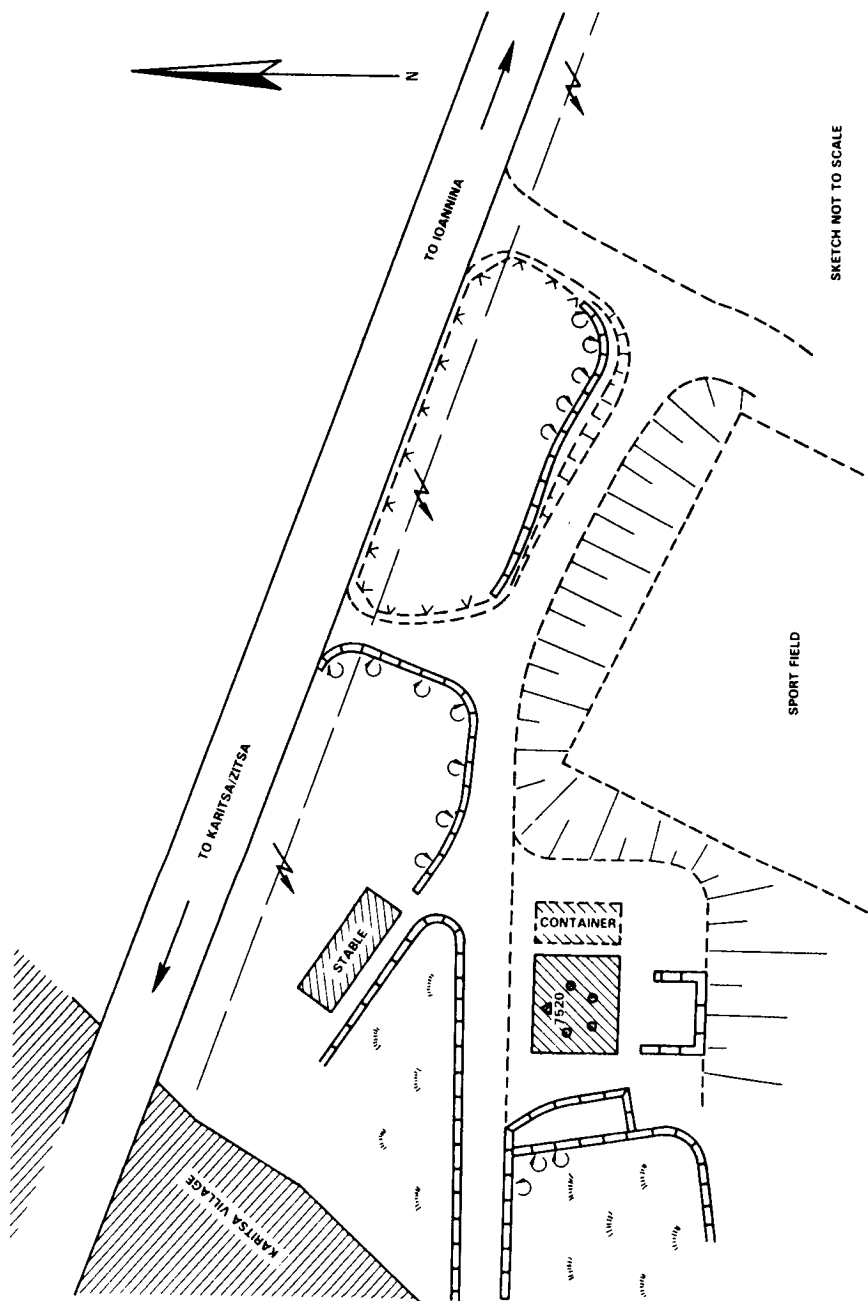


Figure 4-KRITSA. KARITSA Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 675
Current Site Name: KARITSA
Location: KARITSA, GREECE

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7520	MTLRS-1	75201501	18-MAR-86	13-MAY-86	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 138

Current Site Name: KASHIMA

Other Site Name:

Location: KASHIMA, JAPAN

Geographic Region: PACIFIC

Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, POLAR MOTION/EARTH ROTATION, AND MEASUREMENTS SUPPORTING VLBI TECHNIQUE DEVELOPMENT.

Site Description: THE STATION IS LOCATED AT THE KASHIMA SPACE COMMUNICATION CENTER OPERATED BY RADIO RESEARCH LABORATORIES (RRL), MINISTRY OF POSTS AND TELECOMMUNICATIONS. RRL DEVELOPED THIS ACCURATE VLBI SYSTEM TO BE COMPATIBLE WITH THE MARK III SYSTEM. THE 26-METER ANTENNA WAS BUILT IN 1968 AND HAS BEEN USED IN JOINT VLBI EXPERIMENTS BETWEEN JAPAN AND THE UNITED STATES SINCE SUMMER 1984.

Site Topo Map: AVAILABLE FROM THE KASHIMA SPACE COMMUNICATION CENTER.

-- GEOLOGICAL INFORMATION --

Geological Province: MIDDLE TO UPPER PLEISTOCENE VOLCANIC TEPHRA.

Local Geology: ORIGINALLY VOLCANIC ASH, SCORIA, ECT. MOST OF THEM WEATHERED TO FORM SO-CALLED KANTO LOAM. VOLCANIC EJECTA WERE PROVIDED BY PLEISTOCENE/ACTIVE VOLCANOES SUCH AS FUJI, HALONE, AND OTHERS. HOWEVER, AT PRESENT, NO ACTIVE VOLCANISM IS WITHIN 100 KILOMETERS OF KASHIMA. FURTHER GEOLOGICAL DESCRIPTION AVAILABLE IN MACHIDA, H., GEOGRAPHERS REPORT TOKYO METROPOL. UNIVERSITY, 11, 109-132.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 138
Current Site Name: KASHIMA
Location: KASHIMA, JAPAN
Number of Observing Monuments: 1
Surveyed into National Network? NO

Monument Number: 1856
Type of Monument: INTERSECTION OF ROTATION AXIS OF ANTENNA
Monument Inscription: NONE
Systems Using Monument: 26-METER ANTENNA

Latitude: N 35 57' 03.200''
Longitude: E 140 39' 57.830''
Elevation Above MSL (Geoid): 45.460 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: GEOGRAPHICAL SURVEY INSTITUTE LTD./01-JAN-84
Datum/Ellipsoid: TOKYO/GANEKO 1976

Comments: NO MONUMENTS ARE CONNECTED TO A REFERENCE MONUMENT SYSTEM
AROUND THE STATION.

Differential Coordinates FROM Observing Monument 1856 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 138
Current Site Name: KASHIMA
Location: KASHIMA, JAPAN

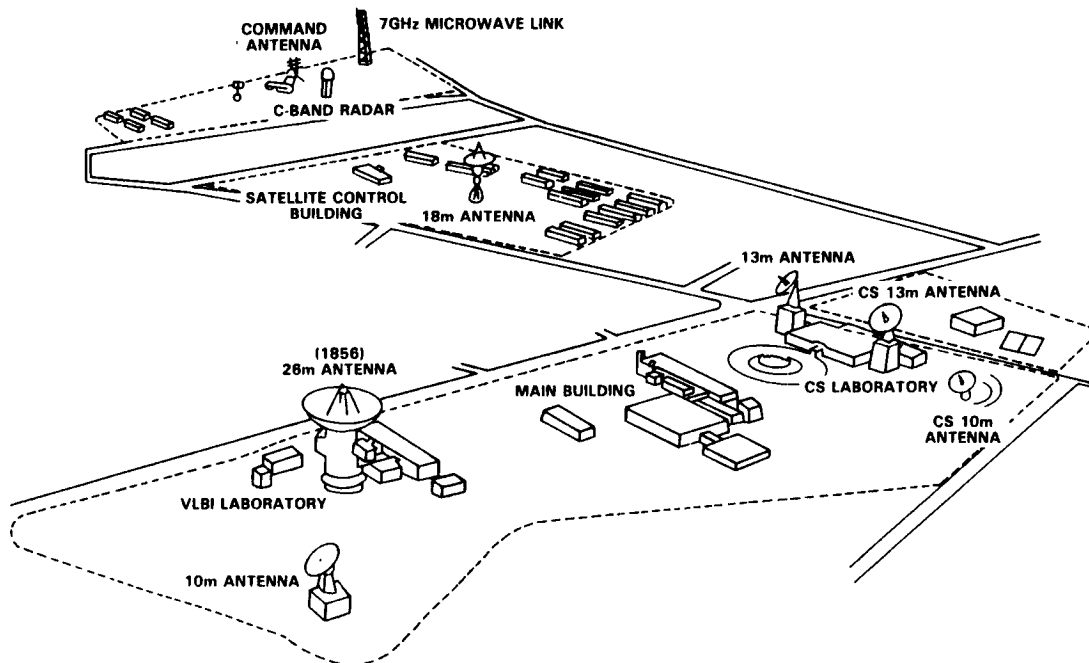


Figure 4-KSHIMA. KASHIMA Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 138
 Current Site Name: KASHIMA
 Location: KASHIMA, JAPAN

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----

-- No Previous Occupations --

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
1856	26-METER	18567601	24-JAN-84	24-JAN-84	YES
1856	26-METER	18567601	24-FEB-84	24-FEB-84	YES
1856	26-METER	18567601	28-JUL-84	28-JUL-84	YES
1856	26-METER	18567601	04-AUG-84	04-AUG-84	YES
1856	26-METER	18567601	30-AUG-84	30-AUG-84	YES
1856	26-METER	18567601	02-SEP-84	02-SEP-84	YES
1856	26-METER	18567601	15-MAY-85	15-MAY-85	YES
1856	26-METER	18567601	19-JUN-85	19-JUN-85	YES
1856	26-METER	18567601	06-JUL-85	06-JUL-85	YES
1856	26-METER	18567601	20-JUL-85	20-JUL-85	YES
1856	26-METER	18567601	27-JUL-85	27-JUL-85	YES
1856	26-METER	18567601	10-AUG-85	10-AUG-85	YES
1856	26-METER	18567601	30-SEP-85	30-SEP-85	YES
1856	26-METER	18567601	21-NOV-85	21-NOV-85	YES
1856	26-METER	18567601	13-MAR-86	13-MAR-86	YES
1856	26-METER	18567601	08-APR-86	08-APR-86	YES
1856	26-METER	18567601	03-MAY-86	03-MAY-86	YES
1856	26-METER	18567601	13-JUN-86	13-JUN-86	YES
1856	26-METER	18567601	18-JUN-86	18-JUN-86	YES
1856	26-METER	18567601	05-JUL-86	05-JUL-86	YES
1856	26-METER	18567601	12-JUL-86	12-JUL-86	YES
1856	26-METER	18567601	26-JUL-86	26-JUL-86	YES
1856	26-METER	18567601	02-AUG-86	02-AUG-86	YES
1856	26-METER	18567601	05-SEP-86	05-SEP-86	YES
1856	26-METER	18567601	05-NOV-86	05-NOV-86	YES
1856	26-METER	18567601	07-NOV-86	07-NOV-86	YES
1856	26-METER	18567601	05-DEC-86	05-DEC-86	YES
1856	26-METER	18567601	20-JAN-87	20-JAN-87	NO

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 138
Current Site Name: KASHIMA
Location: KASHIMA, JAPAN

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
1856	26-METER	18567601	19-FEB-87	19-FEB-87	NO
1856	26-METER	18567601	24-MAR-87	24-MAR-87	NO
1856	26-METER	18567601	21-APR-87	21-APR-87	NO
1856	26-METER	18567601	06-MAY-87	06-MAY-87	NO
1856	26-METER	18567601	29-MAY-87	29-MAY-87	NO
1856	26-METER	18567601	09-JUN-87	09-JUN-87	NO
1856	26-METER	18567601	24-JUN-87	24-JUN-87	NO
1856	26-METER	18567601	28-JUN-87	28-JUN-87	NO
1856	26-METER	18567601	18-JUL-87	18-JUL-87	NO
1856	26-METER	18567601	21-JUL-87	21-JUL-87	NO
1856	26-METER	18567601	23-JUL-87	23-JUL-87	NO
1856	26-METER	18567601	01-AUG-87	01-AUG-87	NO
1856	26-METER	18567601	09-AUG-87	09-AUG-87	NO
1856	26-METER	18567601	27-AUG-87	27-AUG-87	NO
1856	26-METER	18567601	23-SEP-87	23-SEP-87	NO
1856	26-METER	18567601	26-SEP-87	26-SEP-87	NO
1856	26-METER	18567601	19-OCT-87	19-OCT-87	NO
1856	26-METER	18567601	21-OCT-87	21-OCT-87	NO
1856	26-METER	18567601	04-NOV-87	04-NOV-87	NO
1856	26-METER	18567601	05-NOV-87	05-NOV-87	NO
1856	26-METER	18567601	30-NOV-87	30-NOV-87	NO
1856	26-METER	18567601	07-DEC-87	07-DEC-87	NO
1856	26-METER	18567601	20-DEC-87	20-DEC-87	NO

-- SITE INFORMATION --

Site Number: 677

Current Site Name: KATAVIA

Other Site Name: RHODES

Location: KATAVIA, RHODES, GREECE

Geographic Region: MEDITERRANEAN

Tectonic Plate: EURASIAN

-- Site Information Not Yet Available --

-- SITE INFORMATION --

Site Number: 803

Current Site Name: KODIAK

Other Site Name:

Location: KODIAK, AK

Geographic Region: ALASKA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION.

Site Description: THE STATION IS LOCATED ON THE U. S. COAST GUARD SUPPORT CENTER ABOUT SIX MILES SOUTHWEST OF THE CITY OF KODIAK AND ABOUT 1.5 MILES SOUTH OF THE KODIAK AIRPORT. THE SITE IS ABOUT 0.25 MILE INSIDE THE BASE FROM THE MAIN GATE AND SOUTHEAST OF THE BASE CHAPEL. THE OBSERVING MONUMENT IS COMPATIBLE FOR OCCUPATION BY THE MOBILE VLBI SYSTEMS.

Site Topo Map: KODIAK (C-2), ALASKA. N5730- W15220/ 15 X 20, 1949. U.S.G.S., RESTON, VA. 22092

-- GEOLOGICAL INFORMATION --

Geological Province: ALEUTIAN ISLANDS

Local Geology: SLATE AND GREYWACKE (CRETACEOUS FLYSCH, POSSIBLY SHUMAGIN FORMATION)

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 803
Current Site Name: KODIAK
Location: KODIAK, AK
Number of Observing Monuments: 1
Surveyed into National Network? NO

Monument Number: 7278
Type of Monument: MODIFIED CLASS A BENCH ROD
Monument Inscription: NONE
Systems Using Monument: MOBILE VLBI SYSTEMS

Latitude: N 57 44' 23.9000''
Longitude: W 152 29' 49.5788''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 36.649 meters
Survey Source/Date Reported: NGS/01-JAN-86
Datum/Ellipsoid: WGS 72

Comments: NONE

Differential Coordinates FROM Observing Monument 7278 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS GPS RESULTS

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	CHIN	-71.367	533.657	136.351
--	JACK	-268.329	659.240	88.371
--	JOHN	-523.854	13.479	-283.829
--	KODI 1	24.879	-143.865	-41.251

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 803
Current Site Name: KODIAK
Location: KODIAK, AK

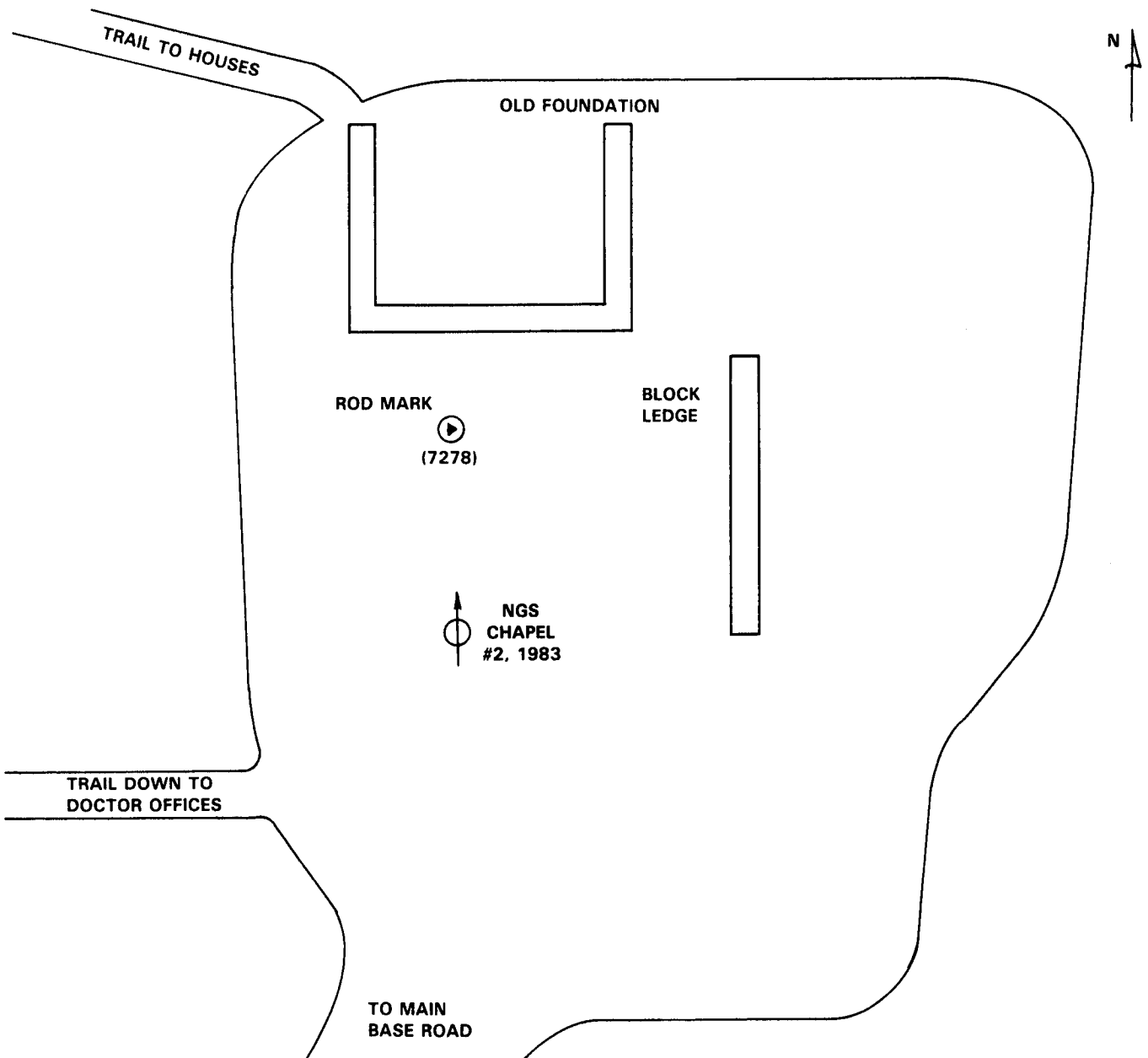


Figure 4-KODIAK. KODIAK Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 803
Current Site Name: KODIAK
Location: KODIAK, AK

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
--------------------	---------------------	--------------------------	------------------	----------------	-----------------

-- No Previous Occupations --

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7278	MV-2	72785201	18-JUL-84	19-JUL-84	YES
7278	MV-3	72785302	18-JUL-85	19-JUL-85	YES
7278	MV-3	72785303	21-JUL-86	23-JUL-86	YES
7278	MV-2	72785204	14-JUL-87	16-JUL-87	NO

-- SITE INFORMATION --

Site Number: 990

Current Site Name: KOKEE PARK

Other Site Name:

Location: KOKEE PARK, KAUAI, HI

Geographic Region: PACIFIC

Tectonic Plate: PACIFIC

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF GLOBAL PLATE MOTION.

Site Description: THE SITE IS IN KOKEE PARK, WAIMEA, KAUAI. KAUAI IS THE NORTHERN MOST ISLAND OF THE EIGHT MAJOR ISLANDS OF THE STATE OF HAWAII. A 12 METER ANTENNA IS USED FOR VLBI MEASUREMENTS STUDYING PLATE MOTION. A MOBILE LASER FACILITY IS LOCATED AT THE COMMAND SITE OF THE HAWAIIAN STDN STATION. THE LASER SITE HAS BEEN ABANDONED.

Site Topo Map: MAP OF KAUA'I, THE GARDEN ISLE. THE UNIVERSITY PRESS OF HAWAII, 2840 KOLOWALU STREET, HONOLULU, HAWAII 96822

-- GEOLOGICAL INFORMATION --

Geological Province: HAWAIIAN ARCHIPELAGO

Local Geology: THE ISLANDS PROBABLY ORIGINATED AS THE RESULT OF MOTION OF THE PACIFIC PLATE OVER A FIXED HOT SPOT. THE HOT SPOT HAS BEEN RELEASING MAGMA FROM FRACTURES AS THE PLATE MOVED NORTHWEST.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 990
Current Site Name: KOKEE PARK
Location: KOKEE PARK, KAUAI, HI
Number of Observing Monuments: 1
Surveyed into National Network? NO

Monument Number: 1311
Type of Monument: AZ-EL AXIS
Monument Inscription: NONE
Systems Using Monument: 9-METER ANTENNA

Latitude: N 22 07' 34.461''
Longitude: E 200 20' 05.439''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 1139.8 meters
Survey Source/Date Reported: NASA DIRECTORY OF STATION LOCATIONS/14-NOV-85
Datum/Ellipsoid: UNKNOWN

Comments: A MORE ACCURATE ANTENNA SURVEY IS SCHEDULED FOR THIS SITE.

Differential Coordinates FROM Observing Monument 1311 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 990
Current Site Name: KOKEE PARK
Location: KOKEE PARK, KAUAI, HI

Monument Number: 7094
Type of Monument: STANDARD NASA DISK
Monument Inscription: NONE
Systems Using Monument: MOBILE LASERS

Latitude: N 22 10 00.000''
Longitude: E 200 20' 00.000''
Elevation Above MSL (Geoid): 1200 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: NASA DIRECTORY OF STATION LOCATIONS/14-NOV-85
Datum/Ellipsoid: UNKNOWN

Comments: THIS PAD WAS CONSTRUCTED AT THE BEGINNING OF THE PROJECT BUT
WAS NEVER USED OR SURVEYED.

Differential Coordinates FROM Observing Monument 7094 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 990
 Current Site Name: KOKEE PARK
 Location: KOKEE PARK, KAUAI, HI

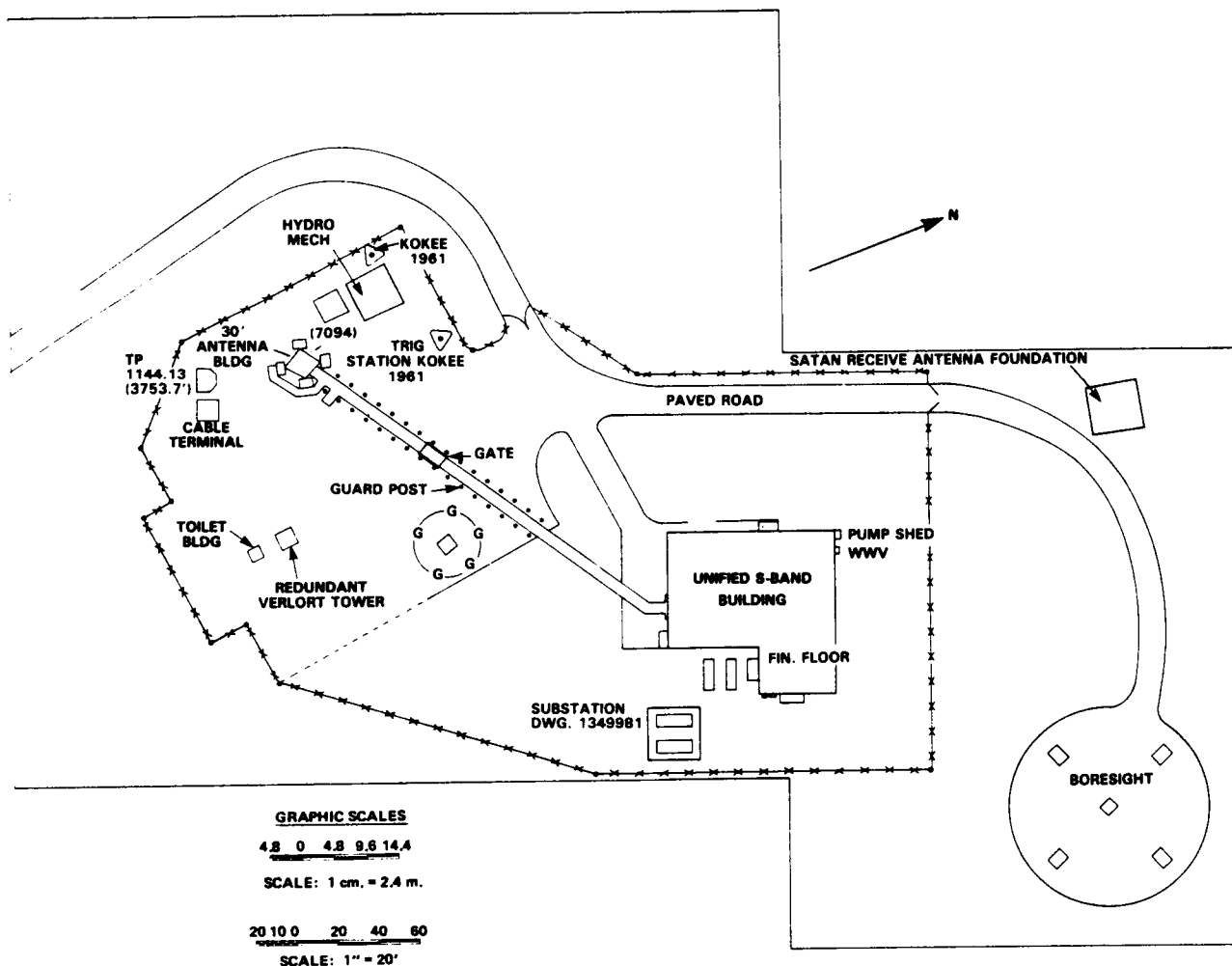


Figure 4-KOKEE. KOKEE PARK Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 990
 Current Site Name: KOKEE PARK
 Location: KOKEE PARK, KAUAI, HI

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
1311	TVDS-3	13119301	07-JUL-84	07-JUL-84	YES
1311	TVDS-3	13119301	21-JUL-84	21-JUL-84	YES
1311	TVDS-3	13119301	28-JUL-84	28-JUL-84	YES
1311	TVDS-3	13119301	04-AUG-84	04-AUG-84	YES
1311	TVDS-2	13119301	15-MAY-85	15-MAY-85	YES
1311	TVDS-2	13119301	06-JUL-85	06-JUL-85	YES
1311	TVDS-2	13119301	20-JUL-85	20-JUL-85	YES
1311	TVDS-2	13119301	27-JUL-85	27-JUL-85	YES
1311	TVDS-2	13119301	10-AUG-85	10-AUG-85	YES
1311	TVDS-2	13119301	30-SEP-85	30-SEP-85	YES
1311	TVDS-2	13119301	12-MAR-86	12-MAR-86	YES
1311	TVDS-2	13119301	13-MAR-86	13-MAR-86	YES
1311	TVDS-2	13119301	08-APR-86	08-APR-86	YES
1311	TVDS-2	13119301	03-MAY-86	03-MAY-86	YES
1311	TVDS-2	13119301	13-JUN-86	13-JUN-86	YES
1311	TVDS-2	13119301	05-JUL-86	05-JUL-86	YES
1311	TVDS-2	13119301	12-JUL-86	12-JUL-86	YES
1311	TVDS-2	13119301	26-JUL-86	26-JUL-86	YES
1311	TVDS-2	13119301	02-AUG-86	02-AUG-86	YES
1311	TVDS-2	13119301	05-SEP-86	05-SEP-86	YES
1311	TVDS-2	13119301	23-OCT-86	23-OCT-86	YES
1311	TVDS-2	13119301	07-NOV-86	07-NOV-86	YES
1311	TVDS-2	13119301	05-DEC-86	05-DEC-86	YES
1311	TVDS-2	13119301	20-JAN-87	20-JAN-87	NO
1311	TVDS-2	13119301	19-JAN-87	19-JAN-87	NO
1311	TVDS-2	13119301	10-MAR-87	10-MAR-87	NO
1311	TVDS-2	13119301	24-MAR-87	24-MAR-87	NO
1311	TVDS-2	13119301	21-APR-87	21-APR-87	NO

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 990
Current Site Name: KOKEE PARK
Location: KOKEE PARK, KAUAI, HI

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
1311	TVDS-2	13119301	06-MAY-87	06-MAY-87	NO
1311	TVDS-2	13119301	09-JUN-87	09-JUN-87	NO
1311	TVDS-2	13119301	18-JUL-87	18-JUL-87	NO
1311	TVDS-2	13119301	23-JUL-87	23-JUL-87	NO
1311	TVDS-2	13119301	18-JUL-87	18-JUL-87	NO
1311	TVDS-2	13119301	01-AUG-87	01-AUG-87	NO
1311	TVDS-2	13119301	09-AUG-87	09-AUG-87	NO
1311	TVDS-2	13119301	23-SEP-87	23-SEP-87	NO
1311	TVDS-2	13119301	19-OCT-87	19-OCT-87	NO
1311	TVDS-2	13119301	04-NOV-87	04-NOV-87	NO
1311	TVDS-2	13119301	07-DEC-87	07-DEC-87	NO

-- SITE INFORMATION --

Site Number: 118

Current Site Name: KOOTWIJK

Other Site Name:

Location: KOOTWIJK OBS., APELDOORN, NETHERLANDS

Geographic Region: EUROPE

Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING MEDITERRANEAN TECTONICS AND SLR DEVELOPMENT AND THE DETERMINATION OF PLATE STABILITY, PLATE DEFORMATION AND MOTION, AND POLAR MOTION/EARTH ROTATION.

Site Description: THE SITE IS LOCATED IN CENTRAL NETHERLANDS AT THE DELFT UNIVERSITY OF TECHNOLOGY, KOOTWIJK OBSERVATORY, APELDOORN, NETHERLANDS. SATELLITE LASER RANGING OPERATIONS STARTED IN AUGUST 1976 AND HAVE BEEN CONTINUING ON A ROUTINE BASIS. THIS IS A REGULAR TEST SITE FOR THE DUTCH-BUILT MOBILE LASER MTLRS-2. THE SITE HAS ALSO BEEN USED FOR COLLOCATION BETWEEN THE MTLRS-1 AND MTLRS-2.

Site Topo Map: THE NETHERLANDS, 1:25,000, SHEET 33A, IN. SQUARE: 465-466/183-184

-- GEOLOGICAL INFORMATION --

Geological Province: SOUTHERN EDGE OF NORTH SEA BASIN

Local Geology: ICE PUSHED LOWER- AND MIDDLE-PLEISTOCENE FLUVIAL FORMATIONS, UPPER-PLEISTOCENE, PERI-GLACIAL DEPOSITS, HOLOCENE INLAND DUNE SANDS.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 118
 Current Site Name: KOOTWIJK
 Location: KOOTWIJK OBS., APELDOORN, NETHERLANDS
 Number of Observing Monuments: 2
 Surveyed into National Network? NO

Monument Number: 7833
 Type of Monument: INTERSECTION OF AZ/EL AXES
 Monument Inscription: NONE
 Systems Using Monument: FIXED LASER TELESCOPE

Latitude: N 52 10' 45.032''
 Longitude: E 5 48' 39.827''
 Elevation Above MSL (Geoid): 49.80 meters
 Height Above Ellipsoid: 47.54 meters
 Survey Source/Date Reported: DUTCH TRIANGULATION SERVICE/09-JUN-83
 Datum/Ellipsoid: E.D. 50/INTERNATIONAL HAYFORD 1909

Comments: THE COORDINATES REFER TO THE INTERSECTION OF AZIMUTHAL AND ELEVATION AXIS OF THE LASER MOUNT (FIXED).

Differential Coordinates FROM Observing Monument 7833 TO
 Reference Monuments and Other Observing Monuments

Data Source: DUTCH TRIANGULATION SERVICE

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	LOCAL NO. 11	-0.97	-3.74	-8.33
--	LOCAL NO. 15	-6.45	25.11	-3.33
--	LOCAL NO. 14	-13.85	45.91	7.03
8833	NONE (MTLRS)	-13.83	-26.31	18.43

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 118
Current Site Name: KOOTWIJK
Location: KOOTWIJK OBS., APELDOORN, NETHERLANDS

Monument Number: 8833
Type of Monument:
Monument Inscription: NONE
Systems Using Monument: MTLRS

Latitude:
Longitude:
Elevation Above MSL (Geoid):
Height Above Ellipsoid:
Survey Source/Date Reported:
Datum/Ellipsoid:

Comments: GEODETIC INFORMATION NOT AVAILABLE.

Differential Coordinates FROM Observing Monument 8833 TO
Reference Monuments and Other Observing Monuments

Data Source: DELFT UNIVERSITY OF TECHNOLOGY

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7833	----	13.83	26.31	-18.43

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --

-- SITE SKETCH --

Site Number: 118
Current Site Name: KOOTWIJK
Location: KOOTWIJK OBS., APELDOORN, NETHERLANDS

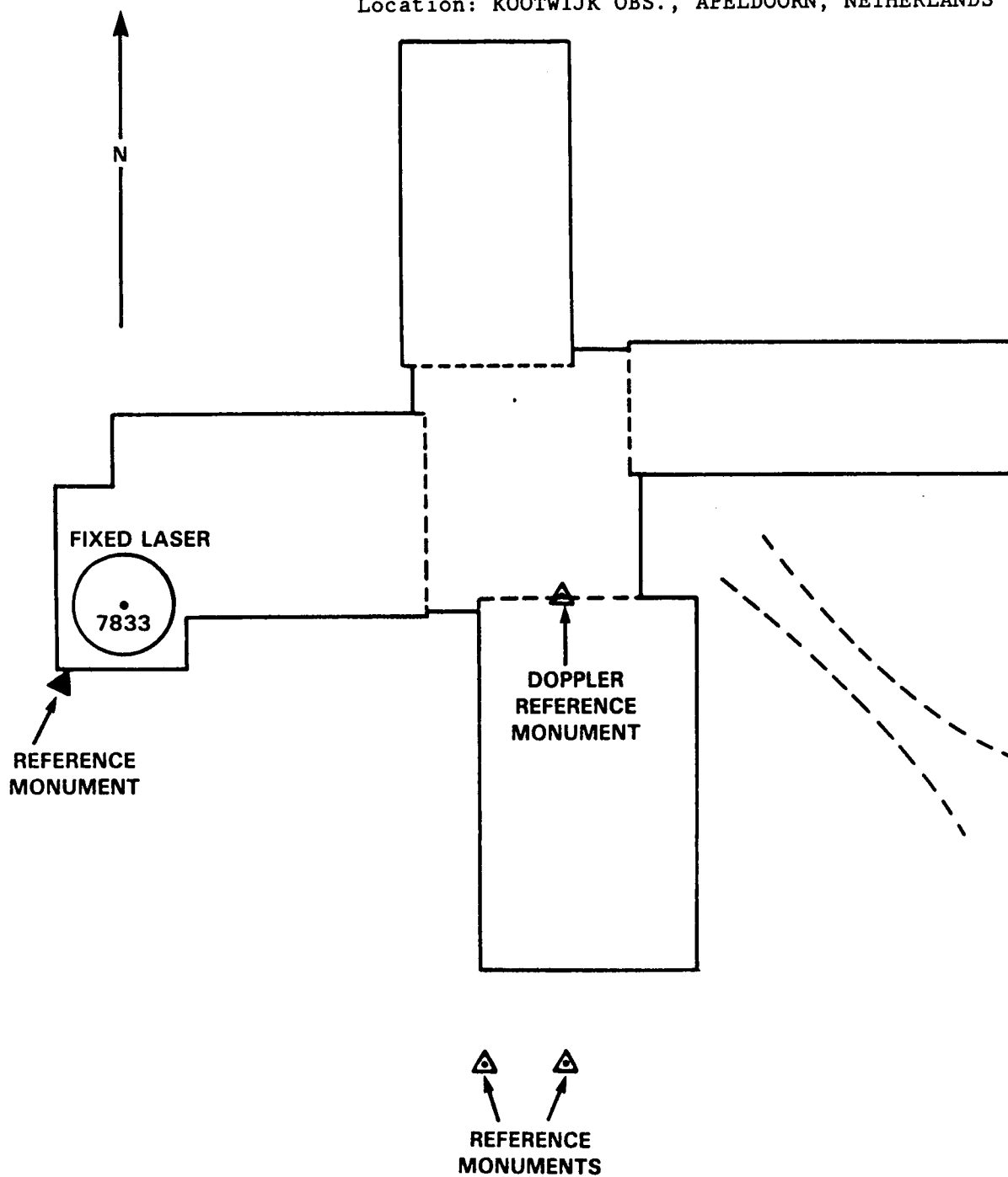


Figure 4-KOTWJK. KOOTWIJK Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 118
 Current Site Name: KOOTWIJK
 Location: KOOTWIJK OBS., APELDOORN, NETHERLANDS

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7833	KOOLAS	78333201	01-MAY-76	---	YES
8833	MTLRS-1	88331501	01-APR-84	31-MAY-84	YES
8833	MTLRS-2	88331602	15-NOV-84	28-FEB-85	YES
8833	MTLRS-2	88331603	18-APR-85	31-AUG-85	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 136

Current Site Name: KWAJALEIN

Other Site Name: ROI-NAMUR

Location: KWAJALEIN, MARSHALL ISLANDS

Geographic Region: PACIFIC

Tectonic Plate: PACIFIC

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, INTERNAL PLATE DEFORMATION, AND PLATE STABILITY.

Site Description: THE SITE IS LOCATED ON THE LAGOON SIDE OF THE AIRPORT ON THE ISLAND OF ROI-NAMUR, FIFTY KILOMETERS NORTH-NORTHWEST OF KWAJALEIN ISLAND. THIS ISLAND IS ON THE NORTHEAST PART OF THE KWAJALEIN ATOLL. AT PRESENT, THE SITE IS EQUIPPED FOR OCCUPATION BY MOBLAS SYSTEMS. THE TRADEX ANTENNA CURRENTLY USED FOR VLBI MEASUREMENTS IS LOCATED ON THE PACIFIC SIDE OF THE ISLAND.

Site Topo Map: UNKNOWN

-- GEOLOGICAL INFORMATION --

Geological Province: MARSHALL ISLANDS

Local Geology: CORAL REEF FORMATION

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 136
Current Site Name: KWAJALEIN
Location: KWAJALEIN, MARSHALL ISLANDS
Number of Observing Monuments: 2
Surveyed into National Network? YES

Monument Number: 4968
Type of Monument: CENTER OF ROTATION OF THE ANTENNA
Monument Inscription: NONE
Systems Using Monument: TRADEX 26-METER ANTENNA

Latitude: N 09 23' 55.3447''
Longitude: E 167 28' 55.1780''
Elevation Above MSL (Geoid): 26.216 meters
Height Above Ellipsoid: 57.316 meters
Survey Source/Date Reported: KWAJALEIN MISSILE RANGE DIRECTORATE/29-JUN-84
Datum/Ellipsoid: WGS 1972/WGS 1972

Comments: NONE

Differential Coordinates FROM Observing Monument 4968 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 136
Current Site Name: KWAJALEIN
Location: KWAJALEIN, MARSHALL ISLANDS

Monument Number: 7092
Type of Monument: STANDARD DMA DISK
Monument Inscription: NASA-GSFC MOBILE LASER NO. 7092 TOPO CENTER
1978
Systems Using Monument: MOBLAS

Latitude: N 09 23' 37.5190''
Longitude: E 167 28' 32.0532''
Elevation Above MSL (Geoid): 1.701 meters
Height Above Ellipsoid: 32.881 meters
Survey Source/Date Reported: DMAHTC-GSS/20-JUN-84
Datum/Ellipsoid: WGS 1972/WGS 1972

Comments: NONE

Differential Coordinates FROM Observing Monument 7092 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 136
Current Site Name: KWAJALEIN
Location: KWAJALEIN, MARSHALL ISLANDS

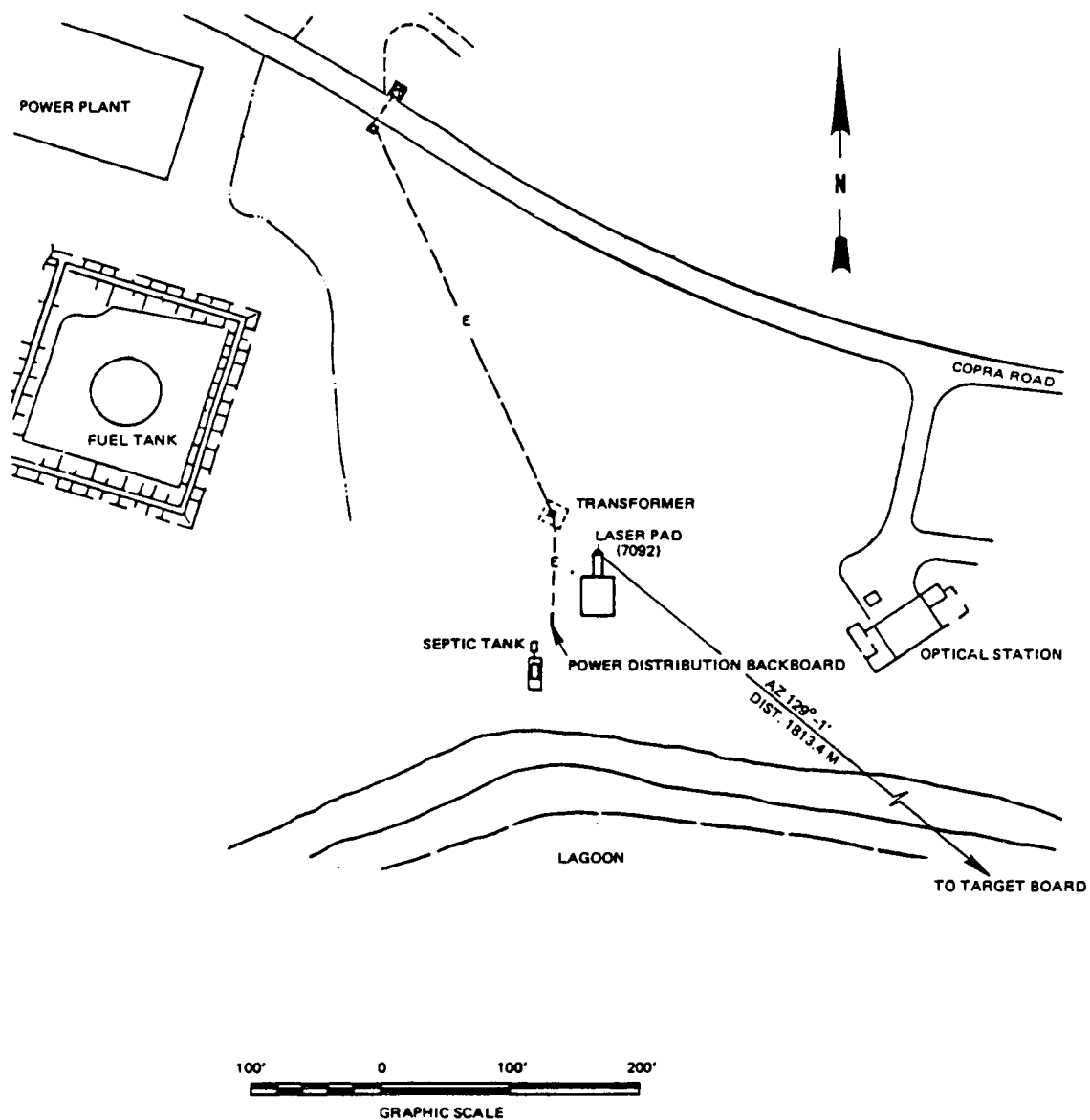


Figure 4-KWAJLN. KWAJALEIN Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 136
 Current Site Name: KWAJALEIN
 Location: KWAJALEIN, MARSHALL ISLANDS

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7092	MOBLAS-8	70920801	15-AUG-79	31-OCT-80	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
4968	TVDS-1	49689101	07-JUL-84	07-JUL-84	YES
4968	TVDS-1	49689101	21-JUL-84	21-JUL-84	YES
4968	TVDS-1	49689101	28-JUL-84	28-JUL-84	YES
4968	TVDS-1	49689101	29-JUL-84	29-JUL-84	YES
4968	TVDS-1	49689101	04-AUG-84	04-AUG-84	YES
4968	TVDS-1	49689101	05-AUG-84	05-AUG-84	YES
4968	TVDS-1	49689102	06-JUL-85	06-JUL-85	YES
4968	TVDS-1	49689102	20-JUL-85	20-JUL-85	YES
4968	TVDS-1	49689102	27-JUL-85	27-JUL-85	YES
4968	TVDS-1	49689102	10-AUG-85	10-AUG-85	YES
4968	TVDS-1	49689102	05-JUL-86	05-JUL-86	YES
4968	TVDS-1	49689102	12-JUL-86	12-JUL-86	YES
4968	TVDS-1	49689102	26-JUL-86	26-JUL-86	YES
4968	TVDS-1	49689102	02-AUG-86	02-AUG-86	YES

-- SITE INFORMATION --

Site Number: 2

Current Site Name: LA JOLLA

Other Site Name:

Location: LA JOLLA, CA

Geographic Region: CALIFORNIA

Tectonic Plate: PACIFIC

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION.

Site Description: THE SITE IS LOCATED 0.5 MILES SOUTH OF THE UNIVERSITY OF CALIFORNIA, SAN DIEGO, IN APPROXIMATE EAST-WEST ALIGNMENT WITH THE SCRIPPS PIER AND THE SUMMIT. THE SITE IS EQUIPPED WITH ONE MONUMENTED PAD COMPATIBLE FOR OCCUPATION BY MOBILE VLBI SYSTEMS.

Site Topo Map: LA JOLLA, CALIFORNIA. N3245-W11707.5/7.5 X 10, 1967, U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: PENINSULA RANGES

Local Geology: QUATERNARY ALLUVIUM

Comments: THIS SITE IS INACTIVE AND NO FURTHER OCCUPATIONS ARE SCHEDULED.

-- MONUMENT INFORMATION --

Site Number: 2
Current Site Name: LA JOLLA
Location: LA JOLLA, CA
Number of Observing Monuments: 1
Surveyed into National Network? NO

Monument Number: 7113
Type of Monument: UNKNOWN
Monument Inscription: NONE
Systems Using Monument: NONE

Latitude:
Longitude:
Elevation Above MSL (Geoid):
Height Above Ellipsoid:
Survey Source/Date Reported:
Datum/Ellipsoid:

Comments: THIS NUMBER WAS ASSIGNED BUT WAS NEVER USED.

Differential Coordinates FROM Observing Monument 7113 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 2
Current Site Name: LA JOLLA
Location: LA JOLLA, CA

Monument Number: 7262
Type of Monument: NAIL IN CONCRETE
Monument Inscription: NONE
Systems Using Monument: MOBILE VLBI

Latitude: N 32 51' 55.89975''
Longitude: W 117 14' 58.84789''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 50.167 meters
Survey Source/Date Reported: NGS/04-JAN-84
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS SITE HAS BEEN ABANDONED.

Differential Coordinates FROM Observing Monument 7262 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 84-08-15

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	DOPPLER 51134 1976	-7.164	-1.788	-8.786
--	DOPPLER 51134 RM 1	15.509	-8.506	-1.169
--	DOPPLER 51134 RM 2	-6.407	6.586	3.360
--	LA JOLLA ARIES 1	26.823	-5.719	12.138
--	LA JOLLA ARIES 2	-23.584	1.763	-15.828
--	LA JOLLA ARIES 3	7.992	15.821	27.941

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	DOPPLER 51134 1976	-10.023	-5.550	-0.677
--	DOPPLER 51134 RM 1	-1.231	17.683	-0.248
--	DOPPLER 51134 RM 2	4.408	-8.712	-0.630
--	LA JOLLA ARIES 1	14.102	26.464	0.539
--	LA JOLLA ARIES 2	-18.305	-21.773	-0.833
--	LA JOLLA ARIES 3	33.088	-0.141	0.274

-- SITE SKETCH --

Site Number: 2
Current Site Name: LA JOLLA
Location: LA JOLLA, CA

-- Site Sketch Not Available --

Figure 4-LA JOL. LA JOLLA Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 2
Current Site Name: LA JOLLA
Location: LA JOLLA, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7262	MV-1	72625101	09-JUL-77	10-JUL-77	NO
7262	MV-2	72625202	13-MAY-81	13-MAY-81	NO

-- SITE INFORMATION --

Site Number: 848

Current Site Name: LAMPEDUSA

Other Site Name:

Location: LAMPEDUSA, ITALY

Geographic Region: MEDITERRANEAN

Tectonic Plate: AFRICAN

-- Site Information Not Yet Available --

-- SITE INFORMATION --

Site Number: 115

Current Site Name: MADRID
Other Site Name: ROBLEDO
Location: MADRID, SPAIN
Geographic Region: EUROPE
Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF GLOBAL PLATE MOTION.

Site Description: THE SITE IS LOCATED IN CENTRAL SPAIN 25 MILES WEST OF MADRID. THE 26-METER ROBLEDO ANTENNA IS USED IN VLBI MEASUREMENT SESSIONS. A NEARBY MONUMENTED PAD IS AVAILABLE FOR MOBILE LASER OCCUPATIONS.

Site Topo Map: UNKNOWN

-- GEOLOGICAL INFORMATION --

Geological Province: UNKNOWN

Local Geology: THE SUBSURFACE IS COMPOSED OF GRANITE AND THIN LAYERS OF SANDY SOIL. SOLID GRANITE BEDROCK OCCURS AT DEPTHS OF THREE TO NINE METERS. VARYING LAYERS OF SOFT GRANITE AND FRACTURED GRANITE OCCUR BETWEEN SURFACE MATERIAL AND BEDROCK. THE AREA IS UNDERGOING A PHASE OF ACTIVE EROSION.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 115
Current Site Name: MADRID
Location: MADRID, SPAIN
Number of Observing Monuments: 2
Surveyed into National Network? YES

Monument Number: 1561
Type of Monument: INTERSECTION OF POLAR AXIS AND HOUR-ANGLE
GEAR
Monument Inscription: NONE
Systems Using Monument: 26-METER VLBI ANTENNA (DSS 61)

Latitude: N 40 25' 47.717''
Longitude: W 4 14' 51.722''
Elevation Above MSL (Geoid): 784.966 meters
Height Above Ellipsoid: 763.9 meters
Survey Source/Date Reported: INSTITUTO GEOGRAFICO Y CATASTRAL/07-MAR-75
Datum/Ellipsoid: E.D. 50

Comments: THIS ANTENNA IS ALSO KNOWN AS ROBLEDO.

Differential Coordinates FROM Observing Monument 1561 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 115
Current Site Name: MADRID
Location: MADRID, SPAIN

Monument Number: 7089
Type of Monument: UNKNOWN
Monument Inscription: NONE
Systems Using Monument: MOBILE LASER

Latitude: N 40 52' 00''
Longitude: W 4 15' 00''
Elevation Above MSL (Geoid): 800 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: UNKNOWN
Datum/Ellipsoid: UNKNOWN

Comments: THESE COORDINATES ARE ESTIMATES.

Differential Coordinates FROM Observing Monument 7089 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 115
Current Site Name: MADRID
Location: MADRID, SPAIN

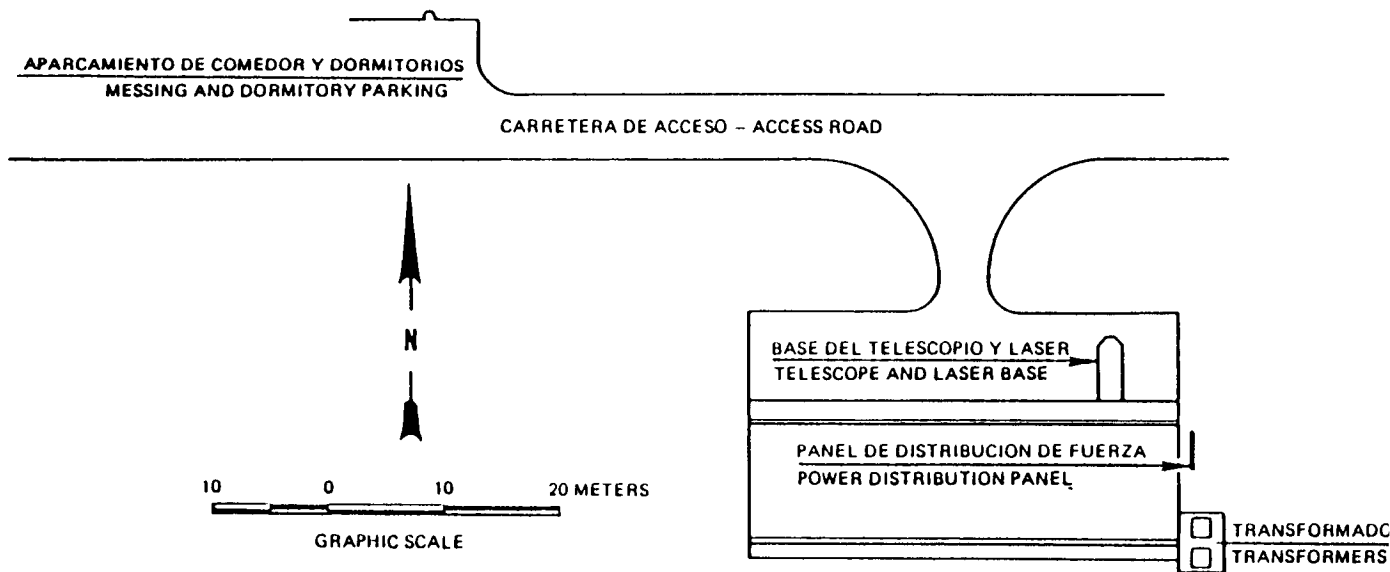


Figure 4-MADRID. MADRID Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 115
Current Site Name: MADRID
Location: MADRID, SPAIN

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
--------------------	---------------------	--------------------------	------------------	----------------	-----------------

-- No Previous Occupations --

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
1561	26-METER	15618401	05-MAY-83	---	YES

-- SITE INFORMATION --

Site Number: 720

Current Site Name: MAMMOTH LAKES
Other Site Name: LONG VALLEY
Location: MAMMOTH LAKES, CA
Geographic Region: CALIFORNIA
Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION ASSOCIATED WITH THE LONG VALLEY CALDERA.

Site Description: THE STATION IS LOCATED IN CALIFORNIA, EAST OF THE YOSEMITE NATIONAL PARK INSIDE A CHAIN LINK FENCE AT A SEWAGE TREATMENT PLANT. THE SITE IS EQUIPPED WITH ONE OBSERVING MONUMENT COMPATIBLE FOR OCCUPATION BY MV-2 AND MV-3. NO PAD IS AVAILABLE AT THIS SITE THUS LIMITING OCCUPANCY TO MOBILE VLBI SYSTEMS. IF THE SITE IS TO BE CONSIDERED FOR LASER MEASUREMENTS IN THE FUTURE, MODIFICATIONS MUST BE MADE.

Site Topo Map: MOUNT MORRISON, CALIFORNIA. 1953, 15 QUAD, U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: SIERRA NEVADA MOUNTAINS

Local Geology: PLEISTOCENE BASALT

Comments: THE SITE WAS ESTABLISHED TO SUPPORT USGS LEVELING PROGRAM IN THE LONG VALLEY CALDERA.

-- MONUMENT INFORMATION --

Site Number: 720
Current Site Name: MAMMOTH LAKES
Location: MAMMOTH LAKES, CA
Number of Observing Monuments: 1
Surveyed into National Network? NO

Monument Number: 7259
Type of Monument: STANDARD NGS DISK
Monument Inscription: JPL MV #II 198
Systems Using Monument: MOBILE VLBI

Latitude: N 37 38' 29.80934''
Longitude: W 118 56' 42.91246''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 2307.359 meters
Survey Source/Date Reported: NGS GPS SURVEY, NOAA TECHNICAL MEMORANDUM
NOS 123, NGS 41/20-APR-87
Datum/Ellipsoid: WGS 72

Comments: NONE

Differential Coordinates FROM Observing Monument 7259 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS GPS SURVEY RESULTS

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	JPL MV #III 1981	-7.136	-4.064	-9.228
--	JPL MV	12.283	7.359	15.879

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	JPL MV #III 1981	-11.588	-4.278	-0.085
--	JPL MV	20.137	7.187	-0.109

-- SITE SKETCH --

Site Number: 720
Current Site Name: MAMMOTH LAKES
Location: MAMMOTH LAKES, CA

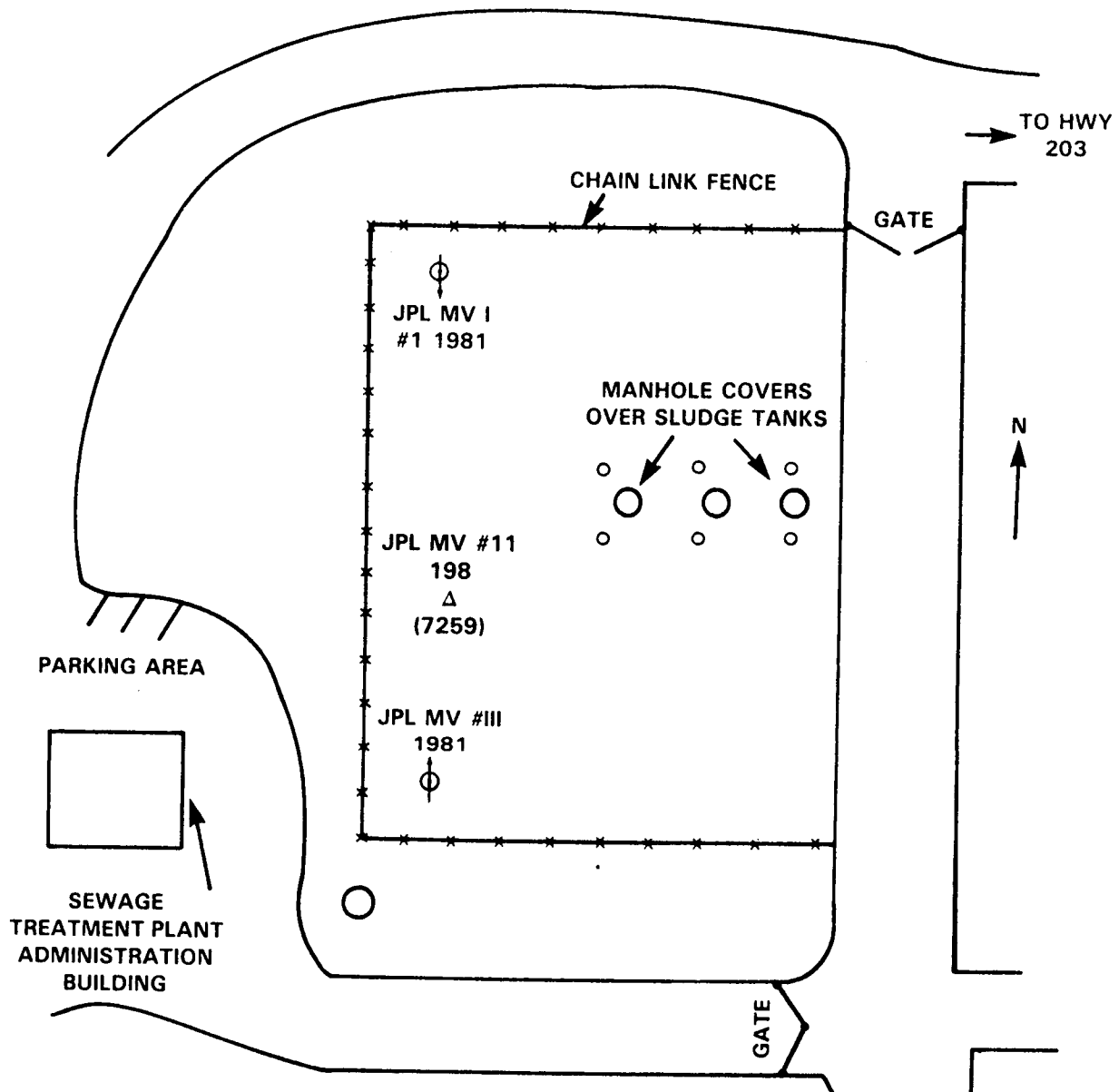


Figure 4-MAMOTH. MAMMOTH LAKES Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 720
Current Site Name: MAMMOTH LAKES
Location: MAMMOTH LAKES, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7259	MV-2	72595201	29-JUN-83	30-JUN-83	YES
7259	MV-2	72595202	09-APR-84	10-APR-84	YES
7259	MV-3	72595303	22-OCT-84	23-OCT-84	YES
7259	MV-3	72595304	22-OCT-86	23-OCT-86	YES

-- SITE INFORMATION --

Site Number: 40

Current Site Name: MARYLAND POINT
Other Site Name:
Location: MARYLAND POINT, MD
Geographic Region: NORTH AMERICA
Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, PLATE STABILITY, AND TESTING OF VLBI SYSTEMS.

Site Description: THE STATION IS LOCATED AT THE MARYLAND POINT OBSERVATORY OF THE NAVAL RESEARCH LABORATORY. THIS FACILITY IS LOCATED ON THE MARYLAND SHORE OF THE POTOMAC RIVER, ABOUT 1.7 MILES NORTHWEST OF MARYLAND POINT AND ABOUT 21 MILES SOUTH OF INDIAN HEAD, MARYLAND. ONE FIXED 85-FOOT RADIO TELESCOPE IS USED FOR VLBI MEASUREMENTS.

Site Topo Map: WIDEWATER, MARYLAND. 1977, 7.5 QUAD, U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: COASTAL PLAIN

Local Geology: POTOMAC RIVER FLOOD PLAIN

Comments: THIS SITE IS PRIMARILY USED FOR TESTING AND EVALUATION OF VLBI SYSTEM CAPABILITIES AND ACCURACY.

-- MONUMENT INFORMATION --

Site Number: 40
Current Site Name: MARYLAND POINT
Location: MARYLAND POINT, MD
Number of Observing Monuments: 1
Surveyed into National Network? YES

Monument Number: 7217
Type of Monument: VLBI REFERENCE POINT ON RADIO TELESCOPE
Monument Inscription: NONE
Systems Using Monument: 85-FOOT RADIO TELESCOPE

Latitude: N 38 22' 26.81930''
Longitude: W 77 13' 51.14705''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 17.491 meters
Survey Source/Date Reported: NGS/28-APR-81
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THE ANTENNA IS ALSO REFERENCED AS NRL 85.

Differential Coordinates FROM Observing Monument 7217 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 84-03-27

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	MARYLAND PT. NO. 2 1957	-4.695	20.726	5.967
--	MARYLAND PT. NO. 3 1957	4.341	-19.245	-46.819
--	MARYLAND PT. NO. 4 1957	10.078	-44.606	-77.688
--	MARYLAND PT. NO. 5	-69.439	-65.739	-88.945
--	MARYLAND PT. OBS. 1957	-148.364	-38.101	-26.199

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	MARYLAND PT. NO. 2 1957	17.870	0.002	-12.957
--	MARYLAND PT. NO. 3 1957	-48.952	-0.021	-13.597
--	MARYLAND PT. NO. 4 1957	-89.295	-0.032	-12.376

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OF POOR QUALITY

-- SITE SKETCH --

Site Number: 40
Current Site Name: MARYLAND POINT
Location: MARYLAND POINT, MD

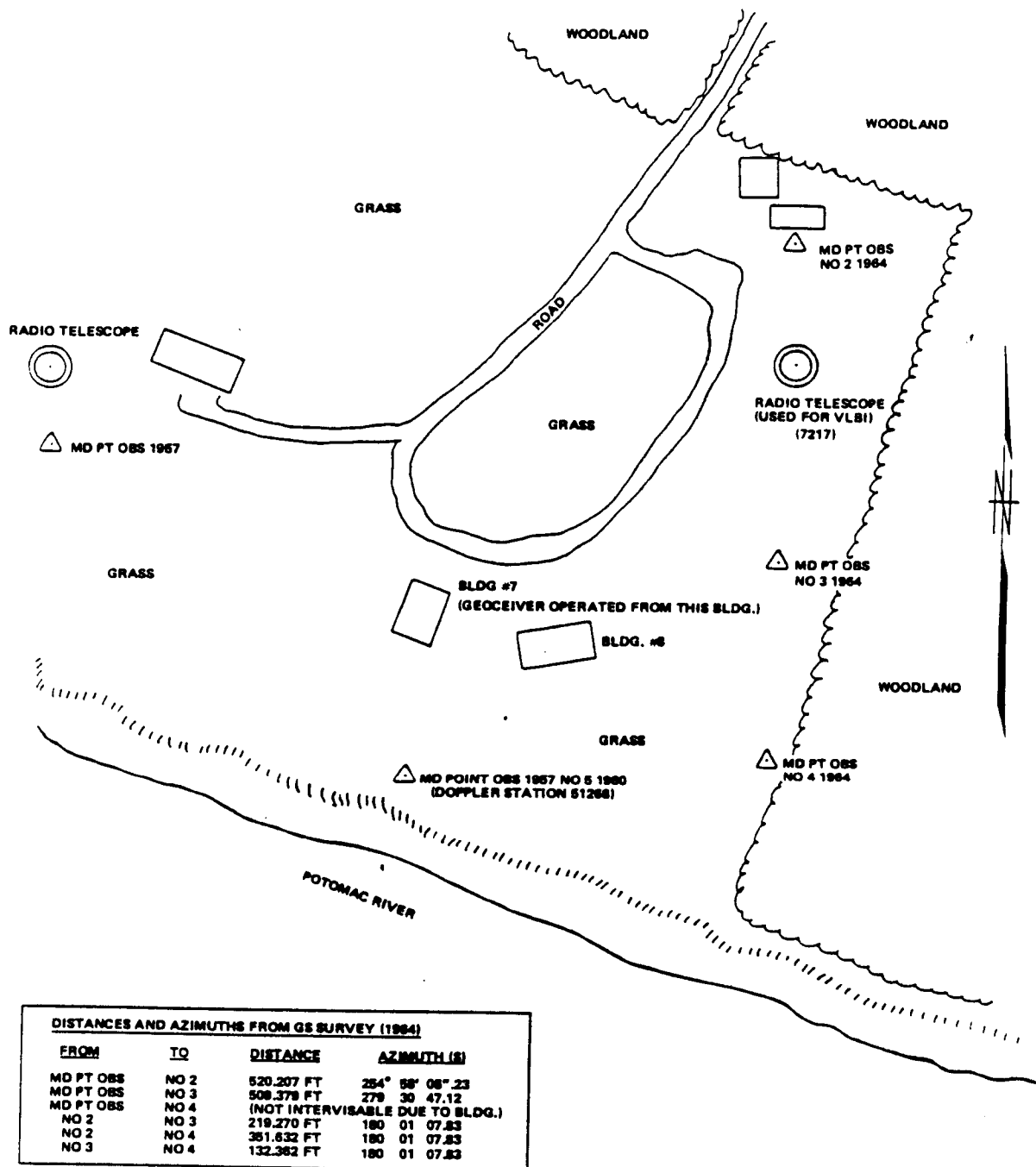


Figure 4-MD PT. MARYLAND POINT Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 40
 Current Site Name: MARYLAND POINT
 Location: MARYLAND POINT, MD

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----

-- No Previous Occupations --

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7217	NRL 85	72178101	18-JUN-82	18-JUN-82	YES
7217	NRL 85	72178101	19-JUN-82	19-JUN-82	YES
7217	NRL 85	72178101	18-OCT-82	18-OCT-82	YES
7217	NRL 85	72178101	29-AUG-83	29-AUG-83	YES
7217	NRL 85	72178101	28-JUL-87	28-JUL-87	NO
7217	NRL 85	72178101	03-AUG-87	03-AUG-87	NO
7217	NRL 85	72178101	11-AUG-87	11-AUG-87	NO
7217	NRL 85	72178101	15-AUG-87	15-AUG-87	NO
7217	NRL 85	72178101	25-OCT-87	25-OCT-87	NO
7217	NRL 85	72178101	29-OCT-87	29-OCT-87	NO
7217	NRL 85	72178101	04-DEC-87	04-DEC-87	NO

-- SITE INFORMATION --

Site Number: 850

Current Site Name: MATERA

Other Site Name:

Location: MATERA, ITALY

Geographic Region: MEDITERRANEAN

Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING MEDITERRANEAN TECTONICS AND SLR AND VLBI TECHNIQUE DEVELOPMENT, AND DETERMINATION OF PLATE MOTION, PLATE STABILITY, AND POLAR MOTION/EARTH ROTATION.

Site Description: THE SITE IS LOCATED IN THE BOOT OF ITALY JUST ABOVE THE INSTEP, FIFTEEN KILOMETERS EAST OF MATERA AND APPROXIMATELY EIGHTY KILOMETERS NORTH OF TARANTO. A FIXED SAO LASER HAS BEEN OPERATED BY THE ITALIANS SINCE SEPTEMBER 1983. TWO SLR PADS ARE LOCATED SOUTHWEST OF THE FIXED LASER BUILDING. THE SITE IS EQUIPPED TO HOST TWO MOBILE LASER SYSTEMS SIMULTANEOUSLY. A FIXED VLBI ANTENNA IS PRESENTLY UNDER CONSTRUCTION AT THIS SITE.

Site Topo Map: UNKNOWN

-- GEOLOGICAL INFORMATION --

Geological Province: SOUTHERN APPENNINES

Local Geology: UPPER CRETACEOUS SEDIMENTS

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 850
Current Site Name: MATERA
Location: MATERA, ITALY
Number of Observing Monuments: 4
Surveyed into National Network? YES

Monument Number: 7235
Type of Monument: UNKNOWN
Monument Inscription: NONE
Systems Using Monument: FIXED VLBI ANTENNA

Latitude:
Longitude:
Elevation Above MSL (Geoid):
Height Above Ellipsoid:
Survey Source/Date Reported:
Datum/Ellipsoid:

Comments: NONE

Differential Coordinates FROM Observing Monument 7235 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 850
Current Site Name: MATERA
Location: MATERA, ITALY

Monument Number: 7540
Type of Monument: STANDARD BRASS MONUMENT IN PAD
Monument Inscription: NONE
Systems Using Monument: MOBILE LASER RANGING SYSTEMS (MTLRS-1)

Latitude: N 40.648540529
Longitude: E 16.704432660
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 528.531 meters
Survey Source/Date Reported: COORDINATES PROVIDED BY DR. DANNY VAN LOON/
01-AUG-87
Datum/Ellipsoid: UNKNOWN

Comments: NONE

Differential Coordinates FROM Observing Monument 7540 TO
Reference Monuments and Other Observing Monuments

Data Source: CENCI AND VAN LOON

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7939	NONE (MARKER 0)	-19.5244	12.2012	28.7652

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --

-- MONUMENT INFORMATION --

(Continued)

Site Number: 850
Current Site Name: MATERA
Location: MATERA, ITALY

Monument Number: 7541
Type of Monument: STANDARD BRASS MONUMENT IN PAD
Monument Inscription: NONE
Systems Using Monument: MOBILE LASER RANGING SYSTEMS (MTLRS-2)

Latitude: N 40.648526964
Longitude: E 16.704231100
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 528.751 meters
Survey Source/Date Reported: COORDINATES PROVIDED BY DR. DANNY VAN LOON/
01-AUG-87
Datum/Ellipsoid: UNKNOWN

Comments: NONE

Differential Coordinates FROM Observing Monument 7541 TO
Reference Monuments and Other Observing Monuments

Data Source: CENCI AND VAN LOON

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7939	NONE (MARKER 0)	-25.2573	27.6237	30.3643

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 850
Current Site Name: MATERA
Location: MATERA, ITALY

Monument Number: 7939
Type of Monument: INTERSECTION OF THE AZIMUTH AND ELEVATION
AXES OF THE LASER
Monument Inscription: NONE
Systems Using Monument: FIXED LASER (SAO-1)

Latitude: N 40 38' 55.7875''
Longitude: E 16 42' 16.6921''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 528.719 meters
Survey Source/Date Reported: TELESPAZIO SURVEYING TEAM (A. CALVITTI,
M. FRONTANI)/01-JAN-86
Datum/Ellipsoid: EUROPEAN 1979/INTERNATIONAL SPHEROID

Comments: NONE

Differential Coordinates FROM Observing Monument 7939 TO
Reference Monuments and Other Observing Monuments

Data Source: CENCI AND VAN LOON

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	MARKER A	2.1641	-2.3255	-2.6143
--	MARKER D	31.1356	-4.1539	-45.8307
--	MARKER E	43.9416	-37.8763	-49.6646
--	MARKER F	15.4548	-59.3709	-8.5594
7540	MARKER B	19.5244	-12.2012	-28.7652
7541	MARKER C	25.2573	-27.6237	-30.3643

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --

-- SITE SKETCH --

Site Number: 850
Current Site Name: MATERA
Location: MATERA, ITALY

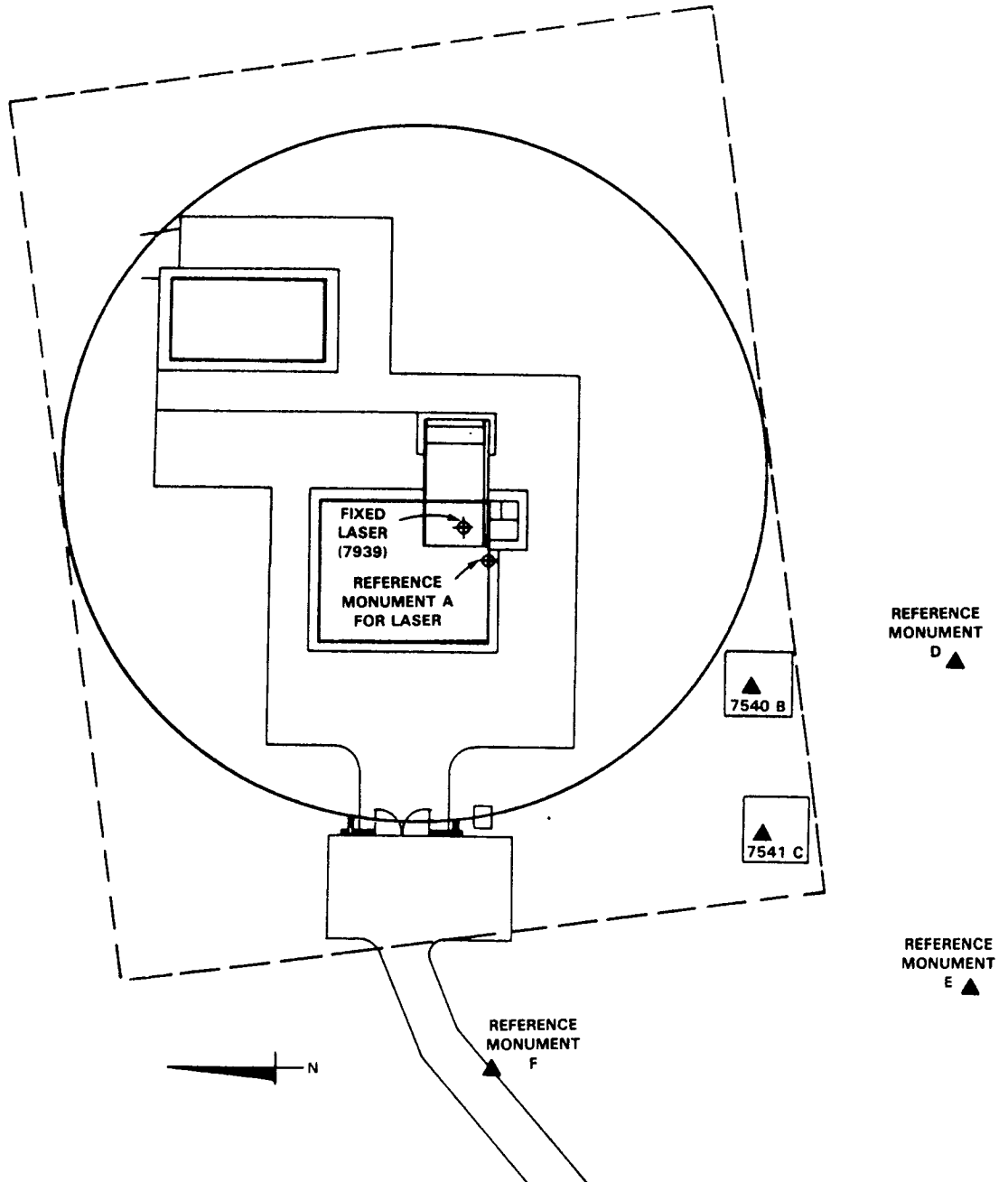


Figure 4-MATERA. MATERA Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 850
Current Site Name: MATERA
Location: MATERA, ITALY

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7540	MTLRS-1	75401501	08-JAN-86	17-MAR-86	YES
7541	MTLRS-2	75411601	08-DEC-85	12-MAR-86	YES
7939	SAO-1	79394101	01-MAY-83	---	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
--------------------	---------------------	--------------------------	------------------	----------------	-----------------

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 71

Current Site Name: MAZATLAN

Other Site Name:

Location: MAZATLAN, SINALOA, MEXICO

Geographic Region: NORTH AMERICA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, PLATE STABILITY, POLAR MOTION/EARTH ROTATION, AND REGIONAL DEFORMATION.

Site Description: THE SITE IS LOCATED 7.5 MILES NORTH OF MAZATLAN, MEXICO. MAZATLAN IS ON THE WEST COAST OF MEXICO JUST SOUTH OF THE TROPIC OF CANCER. THE LASER STATION IS EQUIPPED WITH ONE MONUMENTED PAD THAT HAS BEEN OCCUPIED BY MOBLAS-6 SINCE THE SUMMER OF 1983. THIS SYSTEM WILL REMAIN HERE FOR THE DURATION OF THE PROJECT.

Site Topo Map: UNKNOWN

-- GEOLOGICAL INFORMATION --

Geological Province: BURIED RANGES (SINALOA DELTA)

Local Geology: METAMORPHIC QUARTZ-RICH GNEISS

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 71
Current Site Name: MAZATLAN
Location: MAZATLAN, SINALOA, MEXICO
Number of Observing Monuments: 1
Surveyed into National Network? NO

Monument Number: 7122
Type of Monument: STANDARD NASA DISK
Monument Inscription: 7122-1983
Systems Using Monument: MOBLAS

Latitude: N 23 20' 43.7''
Longitude: W 106 27' 13.6''
Elevation Above MSL (Geoid): 56 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: BFEC--FROM TOPO MAP WITH 250 METER ACCURACY/
01-APR-83
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: ONE OF THE THREE REFERENCE MARKS (7122-RM1-1983) HAS BEEN SET
TO ACCEPT OCCUPATION BY TLRS AND THE SMALLER MV SYSTEMS.

Differential Coordinates FROM Observing Monument 7122 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 71
 Current Site Name: MAZATLAN
 Location: MAZATLAN, SINALOA, MEXICO

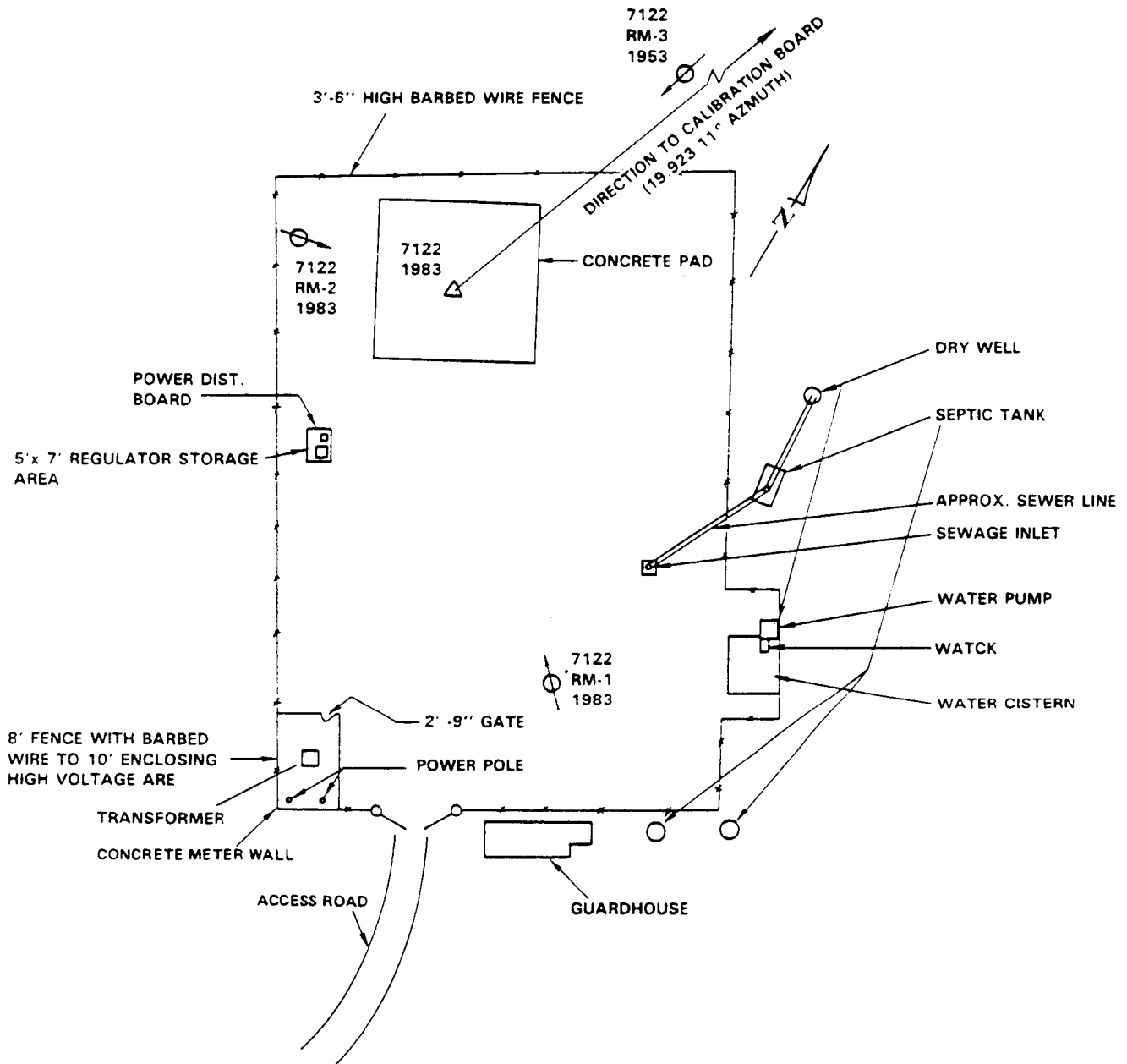


Figure 4-MZTLN. MAZATLAN Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 71
Current Site Name: MAZATLAN
Location: MAZATLAN, SINALOA, MEXICO

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7122	MOBLAS-6	71220601	01-MAR-83	01-MAR-84	YES
7122	MOBLAS-6	71220602	01-JUL-84	15-DEC-85	YES
7122	MOBLAS-6	71220603	16-DEC-85	21-JAN-87	YES
7122	MOBLAS-6	71220604	28-JAN-87	---	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
--------------------	---------------------	--------------------------	------------------	----------------	-----------------

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 33B

Current Site Name: MCDONALD

Other Site Name: FORT DAVIS

Location: MCDONALD OBSERVATORY, FORT DAVIS, TX

Geographic Region: NORTH AMERICA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, PLATE STABILITY, POLAR MOTION/EARTH ROTATION, REGIONAL DEFORMATION, AND INTERCOMPARISON OF MEASUREMENT TECHNIQUES.

Site Description: THE SITE IS LOCATED AT THE MCDONALD OBSERVATORY NEAR FORT DAVIS, TEXAS. THE FACILITY INCLUDES THE FIXED OBSERVATORY WITH A 2.7-METER TELESCOPE AND THE MCDONALD LASER RANGING SYSTEM (MLRS) ON A NEARBY PAD. A NEW PAD FOR THE MLRS AND A GUEST MOBILE LASER PAD ARE BEING CONSTRUCTED ON NEARBY MOUNT FLAT TOP AND WILL BE TIED INTO THE EXISTING MONUMENTATION.

Site Topo Map: MOUNT LOCKE, TEXAS; CASKAT MOUNTAIN, TEXAS. 7.5 MINUTE QUAD, AVAILABLE THROUGH THE U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: ROCKY MOUNTAIN PROVINCE

Local Geology: TERTIARY IGNEOUS ROCKS PREDOMINATELY FOUND ON THE SURFACE. THE INFLUENCE OF TOPOGRAPHY ON SOIL FORMATION IS PRONOUNCED. DUE TO EXTENSIVE EROSION, THE SOILS OF HILLS AND MOUNTAINS ARE SHALLOW, WHEREAS THE SOILS OF VALLEYS AND PLAINS ARE DEEP.

Comments: A SURVEY TIE BETWEEN THIS SITE AND THE FORT DAVIS HRAS ANTENNA ALLOW THESE SITES TO BE CONSIDERED ONE MEASUREMENT LOCATION.

-- MONUMENT INFORMATION --

Site Number: 33B
Current Site Name: MCDONALD
Location: MCDONALD OBSERVATORY, FORT DAVIS, TX
Number of Observing Monuments: 7
Surveyed into National Network? YES

Monument Number: 7080
Type of Monument: STANDARD BRASS DISK
Monument Inscription: 7080 1988
Systems Using Monument: MLRS

Latitude:
Longitude:
Elevation Above MSL (Geoid):
Height Above Ellipsoid:
Survey Source/Date Reported:
Datum/Ellipsoid:

Comments: THIS MONUMENT IS THE NEW LOCATION FOR THE MLRS. THE SURVEY
OF THIS PAD AND THE GUEST PAD IS SCHEDULED FOR JANUARY, 1988.

Differential Coordinates FROM Observing Monument 7080 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 33B
Current Site Name: MCDONALD
Location: MCDONALD OBSERVATORY, FORT DAVIS, TX

Monument Number: 7086
Type of Monument: STANDARD NASA DISK
Monument Inscription: NONE
Systems Using Monument: MLRS, MOBLAS, AND TLRS-1

Latitude: N 30 40' 36.74885''
Longitude: W 104 00' 55.67144''
Elevation Above MSL (Geoid): 1983.210 meters
Height Above Ellipsoid: 1986.050 meters
Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/22-DEC-83
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS MONUMENT IS THE SAME AS MONUMENT 7885.

Differential Coordinates FROM Observing Monument 7086 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 87-09-22

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	MCDONALD RM 1 1942	-755.307	-220.293	-507.619
--	MCDONALD RM 2 1942	-750.219	-214.950	-495.824
--	MCDONALD RM 3 1942 1971	-709.073	-217.668	-482.241
7206	----	-655.977	-228.944	-452.568
7216	----	5914.416	-3496.550	-4031.858
7897	TLRS 7897	-675.354	-198.071	-445.975

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 33B
 Current Site Name: MCDONALD
 Location: MCDONALD OBSERVATORY, FORT DAVIS, TX

Monument Number: 7206
 Type of Monument: CENTER OF INTERSECTION OF AXIS ON TELESCOPE
 Monument Inscription: NONE
 Systems Using Monument: FIXED OBSERVATORY (2.7-METER LURE TELESCOPE)

Latitude: N 30 40' 17.80254''
 Longitude: W 104 01' 17.49012''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 2082.883 meters
 Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/22-DEC-83
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS MONUMENT IS USED FOR LUNAR LASER RANGING ONLY.

Differential Coordinates FROM Observing Monument 7206 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 87-09-22

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	MCDONALD RM 1 1942	-99.330	8.650	-55.051
--	MCDONALD RM 2 1942	-94.243	13.994	-43.256
--	MCDONALD RM 3 1942 1971	-53.096	11.276	-29.674
7086	MOBLAS 1979	655.977	228.944	452.568
7216	----	6570.392	-3267.606	-3579.290
7897	TLRS 7897	-19.377	30.873	6.593
Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	MCDONALD RM 3 1942 1971	-26.504	-54.246	-13.482
7897	TLRS 7897	18.555	-26.280	-18.361

-- MONUMENT INFORMATION --

(Continued)

Site Number: 33B
Current Site Name: MCDONALD
Location: MCDONALD OBSERVATORY, FORT DAVIS, TX

Monument Number: 7850
Type of Monument: STANDARD BRASS DISK
Monument Inscription: 7850 1988
Systems Using Monument: TLRS-3, TLRS-4, MOBILE VLBI

Latitude:
Longitude:
Elevation Above MSL (Geoid):
Height Above Ellipsoid:
Survey Source/Date Reported:
Datum/Ellipsoid:

Comments: THIS MONUMENT WILL BE LOCATED ON THE GUEST PAD BUILT NEAR THE
NEW LOCATION FOR THE MLRS.

Differential Coordinates FROM Observing Monument 7580 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 33B
Current Site Name: MCDONALD
Location: MCDONALD OBSERVATORY, FORT DAVIS, TX

Monument Number: 7851
Type of Monument: STANDARD BRASS DISK
Monument Inscription: 7851 1988
Systems Using Monument: TLRS-1

Latitude:
Longitude:
Elevation Above MSL (Geoid):
Height Above Ellipsoid:
Survey Source/Date Reported:
Datum/Ellipsoid:

Comments: THIS MONUMENT IS LOCATED ON THE GUEST PAD BUILT NEAR THE NEW
MLRS SITE.

Differential Coordinates FROM Observing Monument 7851 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 33B
Current Site Name: MCDONALD
Location: MCDONALD OBSERVATORY, FORT DAVIS, TX

Monument Number: 7885
Type of Monument: STANDARD NASA DISK
Monument Inscription: NONE
Systems Using Monument: MLRS, MOBLAS, AND TLRS-1

Latitude: N 30 40' 36.74885''
Longitude: W 104 00' 55.67144''
Elevation Above MSL (Geoid): 1983.210 meters
Height Above Ellipsoid: 1986.050 meters
Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/22-DEC-83
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS MONUMENT IS THE SAME AS MONUMENT 7086.

Differential Coordinates FROM Observing Monument 7885 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 87-09-22

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	MCDONALD RM 1 1942	-755.307	-220.293	-507.619
--	MCDONALD RM 2 1942	-750.219	-214.950	-495.824
--	MCDONALD RM 3 1942 1971	-709.073	-217.668	-482.241
7206	----	-655.977	-228.944	-452.568
7216	----	5914.416	-3496.550	-4031.858
7897	TLRS 7897	-675.354	-198.071	-445.975

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 33B
Current Site Name: MCDONALD
Location: MCDONALD OBSERVATORY, FORT DAVIS, TX

Monument Number: 7897
Type of Monument: NAIL IN PAVEMENT
Monument Inscription: NONE
Systems Using Monument: TLRS-1

Latitude: N 30 40' 18.40490''
Longitude: W 104 01' 18.47701''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 2064.522 meters
Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/22-DEC-83
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS LOCATION WAS INITIALLY OCCUPIED BY TLRS-1.

Differential Coordinates FROM Observing Monument 7897 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 87-09-22

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	MCDONALD RM 1 1942	-79.953	-22.222	-61.645
--	MCDONALD RM 2 1942	-74.866	-16.879	-49.849
--	MCDONALD RM 3 1942 1971	-33.719	-19.597	-36.267
7086	MOBLAS 1979	675.354	198.071	445.975
7206	----	19.377	-30.873	-6.593
7216	----	6589.769	-3298.479	-3585.883

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	MCDONALD RM 2 1942	-60.483	-68.545	4.258
--	MCDONALD RM 3 1942 1971	-45.060	-27.966	4.880
7206	----	-18.555	26.280	18.361

-- MONUMENT INFORMATION --

(Continued)

Site Number: 33B
Current Site Name: MCDONALD
Location: MCDONALD OBSERVATORY, FORT DAVIS, TX

Monument Number: 7999
Type of Monument:
Monument Inscription: NONE
Systems Using Monument: TLRS-1

Latitude:
Longitude:
Elevation Above MSL (Geoid):
Height Above Ellipsoid:
Survey Source/Date Reported:
Datum/Ellipsoid:

Comments: THIS NUMBER WAS ASSIGNED FOR HORIZONTAL RANGING BUT WAS NEVER
USED FOR POSITIONING.

Differential Coordinates FROM Observing Monument 7999 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 33B
Current Site Name: MCDONALD
Location: MCDONALD OBSERVATORY, FORT DAVIS, TX

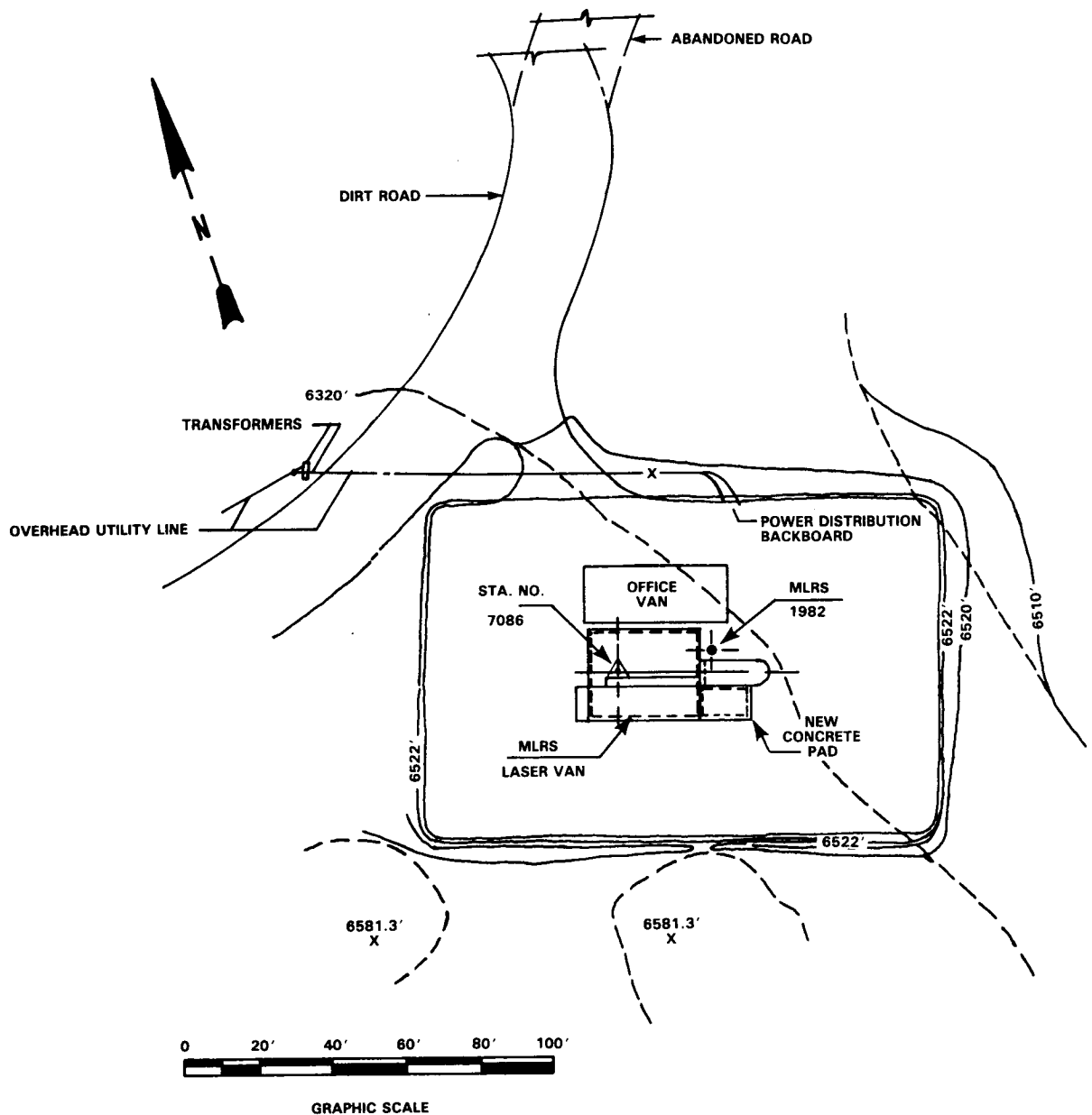


Figure 4-MCDNLD. MCDONALD Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 33B
 Current Site Name: MCDONALD
 Location: MCDONALD OBSERVATORY, FORT DAVIS, TX

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7086	MOBLAS-1	70860101	27-AUG-79	31-MAY-80	YES
7086	TLRS-1	70861102	01-JUL-80	08-AUG-80	YES
7086	MLRS	70862403	11-OCT-82	28-FEB-85	YES
7086	MLRS	70862404	01-MAR-85	17-OCT-86	YES
7086	MLRS	70862405	17-OCT-86	30-JUL-87	YES
7086	MLRS	70862406	30-JUL-87	---	YES
7206	2.7 METER	72062601	01-MAY-76	29-JUN-85	YES
7885	TLRS-1	78851101	23-JUL-82	10-OCT-82	YES
7897	TLRS-1	78971101	01-SEP-79	31-DEC-79	YES
7897	TLRS-1	78971102	01-JAN-80	13-FEB-80	YES
7999	TLRS-1	79991101	09-AUG-80	11-AUG-80	NO

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 684

Current Site Name: MELENGICLIK
Other Site Name: KARAMAN
Location: MELENGICLIK, TURKEY
Geographic Region: MEDITERRANEAN
Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING MEDITERRANEAN TECTONICS.

Site Description: THIS WEGENER-MEDLAS SITE IS LOCATED IN SOUTHERN TURKEY APPROXIMATELY 25 KILOMETERS NORTH OF THE TOWN OF KARAMAN. THE SITE IS EQUIPPED WITH A PAD COMPATIBLE FOR OCCUPATION BY ANY MOBILE LASER SYSTEM, AMERICAN OR EUROPEAN. THIS IS THE FIRST SITE TLRS-1 OCCUPIED IN THE MEDITERRANEAN CAMPAIGN OF 1987.

Site Topo Map: UNKNOWN

-- GEOLOGICAL INFORMATION --

Geological Province: UNKNOWN

Local Geology: UNKNOWN

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 684
Current Site Name: MELENGICLIK
Location: MELENGICLIK, TURKEY
Number of Observing Monuments: 1
Surveyed into National Network? NO

Monument Number: 7580
Type of Monument: UNKNOWN
Monument Inscription: NONE
Systems Using Monument: MTLRS

Latitude: N 37 22'
Longitude: E 33 09'
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: MAP COORDINATES PROVIDED BY DR. PETER WILSON
Datum/Ellipsoid: UNKNOWN

Comments: NONE

Differential Coordinates FROM Observing Monument 7580 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 684
Current Site Name: MELENGICLIK
Location: MELENGICLIK, TURKEY

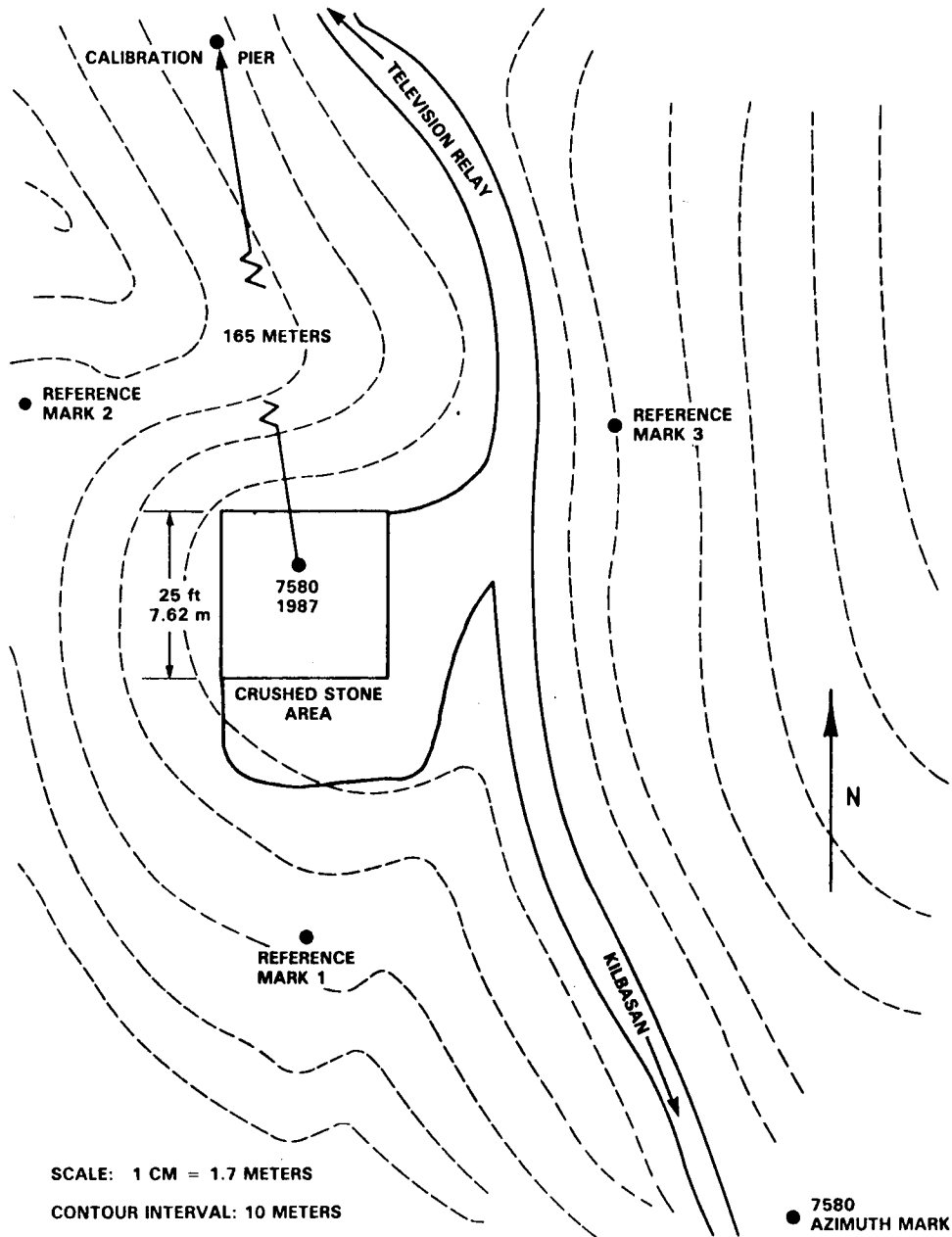


Figure 4-MELEN. MELENGICLIK Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 684
Current Site Name: MELENGICLIK
Location: MELENGICLIK, TURKEY

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7580	TLRS-1	75801101	02-APR-87	16-MAY-87	NO

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-- No Previous Occupations --					

-- SITE INFORMATION --

Site Number: 860

Current Site Name: METSAHOVI

Other Site Name:

Location: KIRKKONUMMI, FINLAND

Geographic Region: EUROPE

Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, PLATE STABILITY, AND POLAR MOTION/EARTH ROTATION.

Site Description: THE SITE IS LOCATED IN KYLMAELAE VILLAGE, APPROXIMATELY THIRTY KILOMETERS WEST-NORTHWEST FROM HELSINKI. A FIXED LASER IS LOCATED AT THE SITE FOR SLR OBSERVATIONS.

Site Topo Map: BASIC MAP 1:20000, NO. 203209, VITTRAESK, TOPOGRAPHIC MAP 1:100000, NO. 2031+2032, ESPOO. AVAILABLE THROUGH THE MAP SERVICE OF THE NATIONAL BOARD OF SURVEY, OPASTINSILTA 12, 00520 HELSINKI, FINLAND.

-- GEOLOGICAL INFORMATION --

Geological Province: PRECAMBRIAN BEDROCK

Local Geology: MICROCLINE GRANITE

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 860
 Current Site Name: METSAHOVI
 Location: KIRKKONUMMI, FINLAND
 Number of Observing Monuments: 1
 Surveyed into National Network? YES

Monument Number: 7805
 Type of Monument: CROSS POINT OF THE AXIS OF THE LASER
 Monument Inscription: NONE
 Systems Using Monument: FIXED LASER

Latitude: N 60 13' 03.4424''
 Longitude: E 24 23' 43.5992''
 Elevation Above MSL (Geoid): 59.23 meters
 Height Above Ellipsoid: NOT AVAILABLE
 Survey Source/Date Reported: FINNISH GEODETIC INSTITUTE/01-JAN-81
 Datum/Ellipsoid: E.D. 50/BOMFORD 1970

Comments: THE LASER TELESCOPE STANDS ON A CONCRETE PILLAR BUILT ON
 BEDROCK.

Differential Coordinates FROM Observing Monument 7805 TO
 Reference Monuments and Other Observing Monuments

Data Source: FGI/1.APRIL 1986

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	METSAHOVI STATION MARK SF 348	-14.707	-10.547	4.152
--	SF 7 FALKBERG	-557.187	-3459.437	1144.012

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 860
Current Site Name: METSAHOVI
Location: KIRKKONUMMI, FINLAND

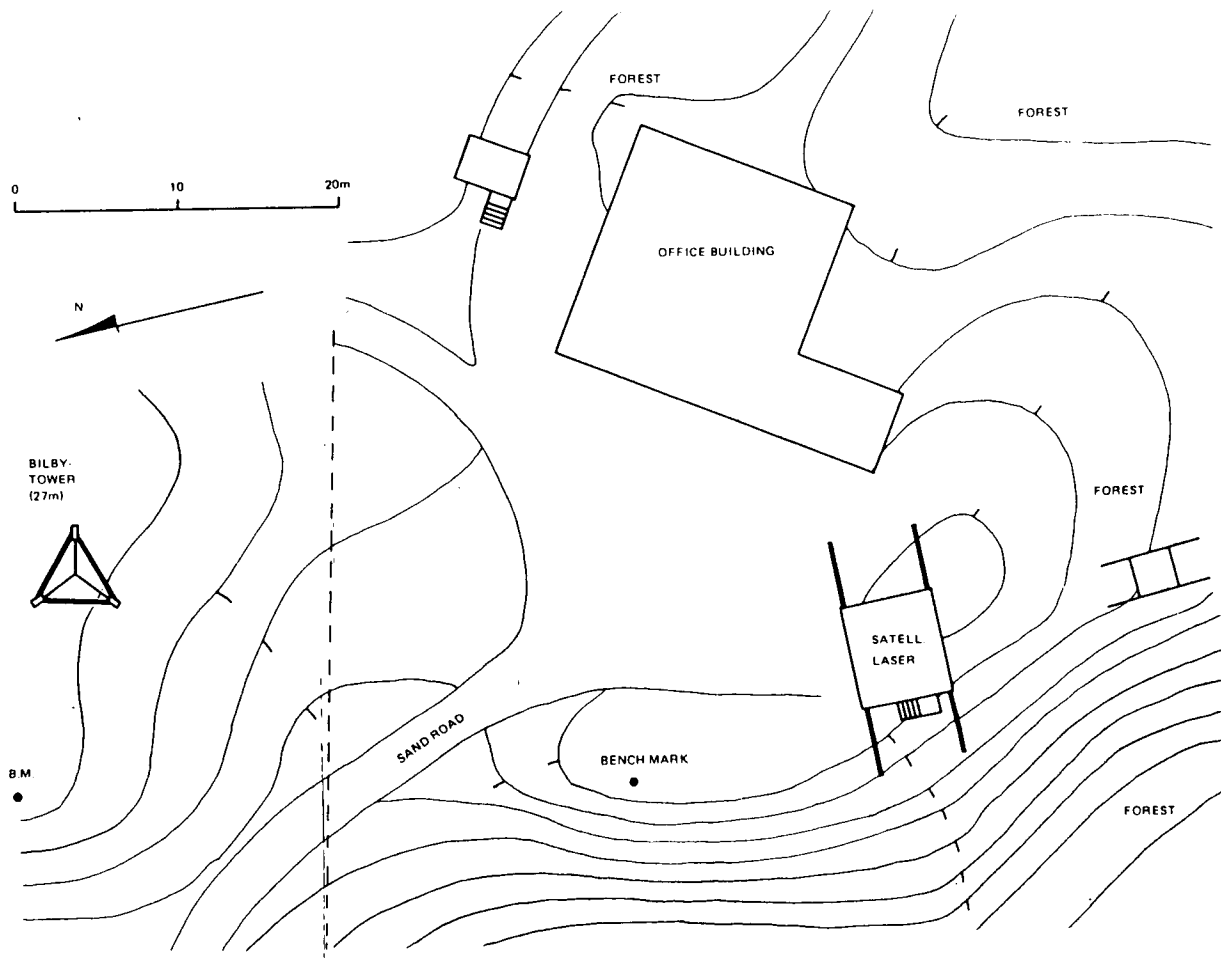


Figure 4-MTSHOV. METSAHOVI Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 860
Current Site Name: METSAHOVI
Location: KIRKKONUMMI, FINLAND

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7805	FINLAS	78053301	01-AUG-78	---	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- SITE INFORMATION --

Site Number: 8B

Current Site Name: MOJAVE
Other Site Name: GOLDSTONE
Location: BARSTOW, CA
Geographic Region: CALIFORNIA
Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING SLR/VLBI BASELINE INTERCOMPARISONS AND VLBI TECHNIQUE DEVELOPMENT, AND THE DETERMINATION OF PLATE MOTION, PLATE STABILITY, AND REGIONAL DEFORMATION.

Site Description: THE SITE IS AN EXISTING NASA ANTENNA COMPLEX LOCATED ON THE FORT IRWIN MILITARY RESERVATION. THE SITE IS LOCATED IN THE SAME GENERAL VICINITY AS THE GOLDSTONE ANTENNAS (DSS-14 AND DSS-13). THIS SITE HAS ONE 12-METER ANTENNA WHICH REPLACES THE DSS-14 AND THE DSS-13 ANTENNAS. A NEARBY MONUMENTED PAD IS IS COMPATIBLE FOR TLRS OR MOBILE VLBI, AND IS USED WITH THE OWENS VALLEY SITE AS A GPS CALIBRATION AND TEST RANGE.

Site Topo Map: GOLDSTONE LAKE, CALIFORNIA. N3515-W11645/15, 1948, CORPS OF ENGINEERS, U.S. ARMY. AVAILABLE THROUGH U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: MOJAVE DESERT REGION

Local Geology: QUATERNARY ALLUVIUM LOCALLY. THE SITE IS EAST OF THE SAN ANDREAS FAULT ON NORTH AMERICAN PLATE. THE RIDGES THAT SURROUND THE SITE ARE BASALTIC.

Comments: THIS STATION IS THE PRINCIPAL VLBI OBSERVING ANTENNA OF THE NASA GOLDSTONE COMPLEX.

-- MONUMENT INFORMATION --

Site Number: 8B
 Current Site Name: MOJAVE
 Location: BARSTOW, CA
 Number of Observing Monuments: 3
 Surveyed into National Network? YES

Monument Number: 7222
 Type of Monument: REFERENCE POINT ON ANTENNA
 Monument Inscription: NONE
 Systems Using Monument: FIXED 12-METER VLBI ANTENNA

Latitude: N 35 19' 53.98662''
 Longitude: W 116 53' 12.44358''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 920.996 meters
 Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT 87-01-13/13-JAN-87
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7222 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 8-16-84

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	MOJAVE A 1981	22.066	-17.216	-18.641
--	MOJAVE B 1981	-14.779	13.612	-4.741
--	MOJAVE C 1981	27.734	12.066	21.530
--	MOJAVE NCMN NO. 1 1983	-253.471	142.251	-8.373
--	MOJAVE NCMN NO. 2 1983	-322.683	81.297	-126.613
--	MOJAVE NCMN NO. 3 1983	-393.108	184.326	-43.221
7265	MOJAVE NCMN 1983	-304.744	137.573	-45.888
7287	MOJAVE TLRS 1984			

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 8B
Current Site Name: MOJAVE
Location: BARSTOW, CA

Monument Number: 7265
Type of Monument: NGS STATION DISK
Monument Inscription: MOJAVE NCMN 1983
Systems Using Monument: TLRS-1 AND MOBILE VLBI

Latitude: N 35 19' 52.48808''
Longitude: W 116 53' 25.66683''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 907.780 meters
Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/16-JUL-86
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS MONUMENT IS SET BELOW THE SURFACE OF THE PAD.

Differential Coordinates FROM Observing Monument 7265 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-07-16

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	MOJAVE A 1981	326.806	-154.795	27.236
--	MOJAVE B 1981	289.961	-123.967	41.137
--	MOJAVE C 1981	332.474	-125.513	67.408
--	MOJAVE NCMN AZ. MK.	-142.682	-461.121	-657.597
--	MOJAVE NCMN NO. 1 1983	51.274	4.676	37.514
--	MOJAVE NCMN NO. 2 1983	-17.942	-56.274	-80.724
--	MOJAVE NCMN NO. 3 1983	-88.363	46.755	2.670
7222	----	304.744	-137.573	45.888

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	MOJAVE NCMN NO. 1 1983	46.429	43.614	-0.628

-- MONUMENT INFORMATION --

(Continued)

Site Number: 8B
Current Site Name: MOJAVE
Location: BARSTOW, CA

Monument Number: 7287
Type of Monument: STANDARD NASA DISK
Monument Inscription: MOJAVE TLRS 1984
Systems Using Monument: TLRS

Latitude: N 35 19' 52.56009
Longitude: W 116 53' 26.50587''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 907.939 meters
Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/16-JUL-86
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS NEW MONUMENT WAS CONSTRUCTED FOR OCCUPATION BY A TLRS.

Differential Coordinates FROM Observing Monument 7287 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-07-16

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	MOJAVE A 1981	345.186	-165.410	25.384
--	MOJAVE B 1981	308.341	-134.582	39.235
--	MOJAVE C 1981	350.854	-136.128	65.505
--	MOJAVE NCMN NO. 1 1983	69.654	-5.939	35.612
--	MOJAVE NCMN NO. 2 1983	0.438	-66.889	-82.627
--	MOJAVE NCMN NO. 3 1983	-69.983	36.140	0.768
7222	----			

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	MOJAVE NCMN NO. 1 1983	44.209	64.808	-0.787
--	MOJAVE NCMN NO. 3 1983	0.960	-78.762	-0.026

-- SITE SKETCH --

Site Number: 8B
 Current Site Name: MOJAVE
 Location: BARSTOW, CA

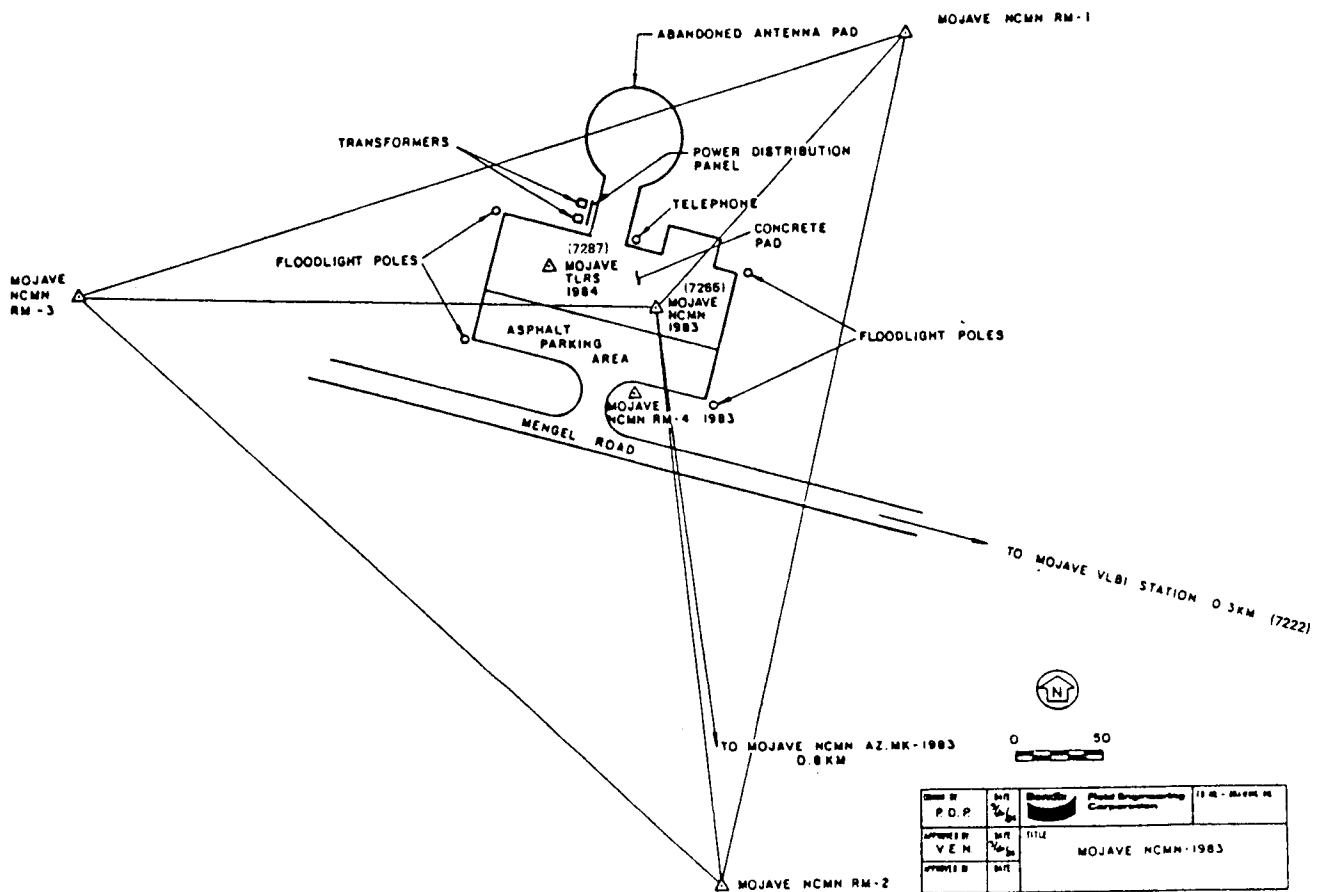


Figure 4-MOJAVE. MOJAVE Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 8B
 Current Site Name: MOJAVE
 Location: BARSTOW, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7265	TLRS-1	72651101	18-JAN-84	06-MAR-84	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7222	12-METER	72227101	28-AUG-83	28-AUG-83	YES
7222	12-METER	72227101	31-AUG-83	31-AUG-83	YES
7222	12-METER	72227101	27-SEP-83	27-SEP-83	YES
7222	12-METER	72227101	12-OCT-83	12-OCT-83	YES
7222	12-METER	72227101	27-OCT-83	27-OCT-83	YES
7222	12-METER	72227101	31-OCT-83	31-OCT-83	YES
7222	12-METER	72227101	03-NOV-83	03-NOV-83	YES
7222	12-METER	72227101	05-NOV-83	05-NOV-83	YES
7222	12-METER	72227101	08-NOV-83	08-NOV-83	YES
7222	12-METER	72227101	10-NOV-83	10-NOV-83	YES
7222	12-METER	72227101	12-NOV-83	12-NOV-83	YES
7222	12-METER	72227101	21-NOV-83	21-NOV-83	YES
7222	12-METER	72227101	01-DEC-83	01-DEC-83	YES
7222	12-METER	72227101	04-JAN-84	05-JAN-84	YES
7222	12-METER	72227101	07-JAN-84	08-JAN-84	YES
7222	12-METER	72227101	14-JAN-84	15-JAN-84	YES
7222	12-METER	72227101	23-JAN-84	23-JAN-84	YES
7222	12-METER	72227101	08-FEB-84	09-FEB-84	YES
7222	12-METER	72227101	20-FEB-84	20-FEB-84	YES
7222	12-METER	72227101	21-FEB-84	21-FEB-84	YES
7222	12-METER	72227101	23-FEB-84	23-FEB-84	YES
7222	12-METER	72227101	24-FEB-84	25-FEB-84	YES
7222	12-METER	72227101	26-FEB-84	27-FEB-84	YES
7222	12-METER	72227101	29-FEB-84	01-MAR-84	YES
7222	12-METER	72227101	03-MAR-84	04-MAR-84	YES
7222	12-METER	72227101	09-APR-84	10-APR-84	YES
7222	12-METER	72227101	12-APR-84	12-APR-84	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 8B
Current Site Name: MOJAVE
Location: BARSTOW, CA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7222	12-METER	72227101	17-APR-84	17-APR-84	YES
7222	12-METER	72227101	21-APR-84	22-APR-84	YES
7222	12-METER	72227101	25-APR-84	25-APR-84	YES
7222	12-METER	72227101	26-APR-84	27-APR-84	YES
7222	12-METER	72227101	17-JUL-84	18-JUL-84	YES
7222	12-METER	72227101	28-JUL-84	29-JUL-84	YES
7222	12-METER	72227101	04-AUG-84	05-AUG-84	YES
7222	12-METER	72227101	30-AUG-84	31-AUG-84	YES
7222	12-METER	72227101	02-SEP-84	03-SEP-84	YES
7222	12-METER	72227101	22-OCT-84	23-OCT-84	YES
7222	12-METER	72227101	25-OCT-84	26-OCT-84	YES
7222	12-METER	72227101	28-OCT-84	29-OCT-84	YES
7222	12-METER	72227101	31-OCT-84	01-NOV-84	YES
7222	12-METER	72227101	05-MAR-85	05-MAR-85	YES
7222	12-METER	72227101	07-MAY-85	07-MAY-85	YES
7222	12-METER	72227101	09-MAY-85	09-MAY-85	YES
7222	12-METER	72227101	15-MAY-85	15-MAY-85	YES
7222	12-METER	72227101	12-JUN-85	12-JUN-85	YES
7222	12-METER	72227101	19-JUN-85	19-JUN-85	YES
7222	12-METER	72227101	06-JUL-85	06-JUL-85	YES
7222	12-METER	72227101	20-JUL-85	20-JUL-85	YES
7222	12-METER	72227101	27-JUL-85	27-JUL-85	YES
7222	12-METER	72227101	10-AUG-85	10-AUG-85	YES
7222	12-METER	72227101	24-AUG-85	24-AUG-85	YES
7222	12-METER	72227101	30-SEP-85	30-SEP-85	YES
7222	12-METER	72227101	29-OCT-85	29-OCT-85	YES
7222	12-METER	72227101	21-NOV-85	21-NOV-85	YES
7222	12-METER	72227101	05-JAN-86	05-JAN-86	YES
7222	12-METER	72227101	20-JAN-86	20-JAN-86	YES
7222	12-METER	72227101	18-FEB-86	18-FEB-86	YES
7222	12-METER	72227101	23-FEB-86	23-FEB-86	YES
7222	12-METER	72227101	26-FEB-86	26-FEB-86	YES
7222	12-METER	72227101	11-MAR-86	11-MAR-86	YES
7222	12-METER	72227101	12-MAR-86	12-MAR-86	YES
7222	12-METER	72227101	26-MAR-86	26-MAR-86	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 8B
Current Site Name: MOJAVE
Location: BARSTOW, CA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7222	12-METER	72227101	30-MAR-86	30-MAR-86	YES
7222	12-METER	72227101	01-APR-86	01-APR-86	YES
7222	12-METER	72227101	02-APR-86	02-APR-86	YES
7222	12-METER	72227101	04-APR-86	04-APR-86	YES
7222	12-METER	72227101	06-APR-86	06-APR-86	YES
7222	12-METER	72227101	07-APR-86	07-APR-86	YES
7222	12-METER	72227101	08-APR-86	08-APR-86	YES
7222	12-METER	72227101	10-APR-86	10-APR-86	YES
7222	12-METER	72227101	13-APR-86	13-APR-86	YES
7222	12-METER	72227101	17-APR-86	17-APR-86	YES
7222	12-METER	72227101	14-MAY-86	14-MAY-86	YES
7222	12-METER	72227101	18-MAY-86	18-MAY-86	YES
7222	12-METER	72227101	21-MAY-86	21-MAY-86	YES
7222	12-METER	72227101	29-MAY-86	29-MAY-86	YES
7222	12-METER	72227101	11-JUN-86	11-JUN-86	YES
7222	12-METER	72227101	18-JUN-86	18-JUN-86	YES
7222	12-METER	72227101	05-JUL-86	05-JUL-86	YES
7222	12-METER	72227101	12-JUL-86	12-JUL-86	YES
7222	12-METER	72227101	16-JUL-86	16-JUL-86	YES
7222	12-METER	72227101	26-JUL-86	26-JUL-86	YES
7222	12-METER	72227101	02-AUG-86	02-AUG-86	YES
7222	12-METER	72227101	13-AUG-86	13-AUG-86	YES
7222	12-METER	72227101	17-SEP-86	17-SEP-86	YES
7222	12-METER	72227101	14-OCT-86	14-OCT-86	YES
7222	12-METER	72227101	16-OCT-86	16-OCT-86	YES
7222	12-METER	72227101	18-OCT-86	18-OCT-86	YES
7222	12-METER	72227101	19-OCT-86	19-OCT-86	YES
7222	12-METER	72227101	22-OCT-86	22-OCT-86	YES
7222	12-METER	72227101	26-OCT-86	26-OCT-86	YES
7222	12-METER	72227101	27-OCT-86	27-OCT-86	YES
7222	12-METER	72227101	29-OCT-86	29-OCT-86	YES
7222	12-METER	72227101	31-OCT-86	31-OCT-86	YES
7222	12-METER	72227101	01-NOV-86	01-NOV-86	YES
7222	12-METER	72227101	04-NOV-86	04-NOV-86	YES
7222	12-METER	72227101	05-NOV-86	05-NOV-86	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 8B
Current Site Name: MOJAVE
Location: BARSTOW, CA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7222	12-METER	72227101	12-NOV-86	12-NOV-86	YES
7222	12-METER	72227101	07-DEC-86	07-DEC-86	YES
7222	12-METER	72227101	10-DEC-86	10-DEC-86	YES
7222	12-METER	72227101	13-DEC-86	13-DEC-86	YES
7222	12-METER	72227101	16-DEC-86	16-DEC-86	YES
7222	12-METER	72227101	17-DEC-86	17-DEC-86	YES
7222	12-METER	72227101	14-JAN-87	14-JAN-87	NO
7222	12-METER	72227101	28-JAN-87	28-JAN-87	NO
7222	12-METER	72227101	31-JAN-87	31-JAN-87	NO
7222	12-METER	72227101	03-FEB-87	03-FEB-87	NO
7222	12-METER	72227101	06-FEB-87	06-FEB-87	NO
7222	12-METER	72227101	09-FEB-87	09-FEB-87	NO
7222	12-METER	72227101	24-FEB-87	24-FEB-87	NO
7222	12-METER	72227101	10-MAR-87	10-MAR-87	NO
7222	12-METER	72227101	22-MAR-87	22-MAR-87	NO
7222	12-METER	72227101	24-MAR-87	24-MAR-87	NO
7222	12-METER	72227101	25-MAR-87	25-MAR-87	NO
7222	12-METER	72227101	26-MAR-87	26-MAR-87	NO
7222	12-METER	72227101	28-MAR-87	28-MAR-87	NO
7222	12-METER	72227101	09-APR-87	09-APR-87	NO
7222	12-METER	72227101	14-APR-87	14-APR-87	NO
7222	12-METER	72227101	01-MAY-87	01-MAY-87	NO
7222	12-METER	72227101	04-MAY-87	04-MAY-87	NO
7222	12-METER	72227101	06-MAY-87	06-MAY-87	NO
7222	12-METER	72227101	10-MAY-87	10-MAY-87	NO
7222	12-METER	72227101	14-MAY-87	14-MAY-87	NO
7222	12-METER	72227101	17-MAY-87	17-MAY-87	NO
7222	12-METER	72227101	21-MAY-87	21-MAY-87	NO
7222	12-METER	72227101	24-MAY-87	24-MAY-87	NO
7222	12-METER	72227101	18-JUN-87	18-JUN-87	NO
7222	12-METER	72227101	24-JUN-87	24-JUN-87	NO
7222	12-METER	72227101	29-JUN-87	29-JUN-87	NO
7222	12-METER	72227101	30-JUN-87	30-JUN-87	NO
7222	12-METER	72227101	24-JUN-87	24-JUN-87	NO
7222	12-METER	72227101	08-JUL-87	08-JUL-87	NO

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 8B
Current Site Name: MOJAVE
Location: BARSTOW, CA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7222	12-METER	72227101	15-JUL-87	15-JUL-87	NO
7222	12-METER	72227101	18-JUL-87	18-JUL-87	NO
7222	12-METER	72227101	23-JUL-87	23-JUL-87	NO
7222	12-METER	72227101	25-JUL-87	25-JUL-87	NO
7222	12-METER	72227101	01-AUG-87	01-AUG-87	NO
7222	12-METER	72227101	07-AUG-87	07-AUG-87	NO
7222	12-METER	72227101	09-AUG-87	09-AUG-87	NO
7222	12-METER	72227101	13-AUG-87	13-AUG-87	NO
7222	12-METER	72227101	20-AUG-87	20-AUG-87	NO
7222	12-METER	72227101	22-AUG-87	22-AUG-87	NO
7222	12-METER	72227101	11-SEP-87	11-SEP-87	NO
7222	12-METER	72227101	15-OCT-87	15-OCT-87	NO
7222	12-METER	72227101	16-OCT-87	16-OCT-87	NO
7222	12-METER	72227101	18-OCT-87	18-OCT-87	NO
7222	12-METER	72227101	19-OCT-87	19-OCT-87	NO
7222	12-METER	72227101	21-OCT-87	21-OCT-87	NO
7222	12-METER	72227101	22-OCT-87	22-OCT-87	NO
7222	12-METER	72227101	24-OCT-87	24-OCT-87	NO
7222	12-METER	72227101	27-OCT-87	27-OCT-87	NO
7222	12-METER	72227101	28-OCT-87	28-OCT-87	NO
7222	12-METER	72227101	31-OCT-87	31-OCT-87	NO
7222	12-METER	72227101	01-NOV-87	01-NOV-87	NO
7222	12-METER	72227101	05-NOV-87	05-NOV-87	NO
7222	12-METER	72227101	10-NOV-87	10-NOV-87	NO
7222	12-METER	72227101	01-DEC-87	01-DEC-87	NO
7222	12-METER	72227101	05-DEC-87	05-DEC-87	NO
7222	12-METER	72227101	08-DEC-87	08-DEC-87	NO
7222	12-METER	72227101	11-DEC-87	11-DEC-87	NO
7222	12-METER	72227101	14-DEC-87	14-DEC-87	NO
7222	12-METER	72227101	15-DEC-87	15-DEC-87	NO
7287	MV-2	72875201	01-NOV-87	02-NOV-87	NO

-- SITE INFORMATION --

Site Number: 883

Current Site Name: MONTE GENEROSO

Other Site Name:

Location: MONTE GENEROSO, SWITZERLAND

Geographic Region: EUROPE

Tectonic Plate: EURASIAN

-- Site Information Not Yet Available --

-- SITE INFORMATION --

Site Number: 701

Current Site Name: MONUMENT PEAK

Other Site Name:

Location: MOUNT LAGUNA, CA

Geographic Region: CALIFORNIA

Tectonic Plate: PACIFIC

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, PLATE STABILITY, POLAR MOTION/EARTH ROTATION, REGIONAL DEFORMATION, AND INTERCOMPARISON OF MEASUREMENT TECHNIQUES.

Site Description: THE STATION IS LOCATED ON MONUMENT PEAK IN THE CLEVELAND NATIONAL PARK NEAR PINE VALLEY, CALIFORNIA ONE MILE NORTHWEST OF THE DEACTIVATED MOUNT LAGUNA AIR FORCE RADAR STATION. THE SITE WAS BUILT TO REPLACE THE OTAY MOUNTAIN SITE. A MONUMENTED PAD HAS BEEN OCCUPIED BY MOBLAS-4 SINCE SEPTEMBER 1983. A JPL DISK AND A MONUMENT SUITABLE FOR OCCUPATION BY MOBILE VLBI ARE ALSO WITHIN THE SITE FACILITY.

Site Topo Map: MONUMENT PEAK, CALIFORNIA. N3252.5-W11622.5/7.5, 1959, U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: PENINSULA RANGES; WEST OF THE SAN ANDREAS FAULT.

Local Geology: PRE-CENOZOIC (GRANITIC AND METAMORPHIC ROCK). THE STATION IS LOCATED ALONG THE EASTERN EDGE OF THE PENINSULA MOUNTAIN RANGE. THE PENINSULA RANGE RUNS PARALLEL TO THE PACIFIC COAST AND CONTINUES SOUTH INTO MEXICO.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 701
 Current Site Name: MONUMENT PEAK
 Location: MOUNT LAGUNA, CA
 Number of Observing Monuments: 3
 Surveyed into National Network? YES

Monument Number: 7110
 Type of Monument: STANDARD NASA DISK
 Monument Inscription: ORT STATION 7110 1981
 Systems Using Monument: MOBLAS-4

Latitude: N 32 53' 30.02645''
 Longitude: W 116 25' 18.50572''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 1845.575 meters
 Survey Source/Date Reported: NGS/01-FEB-84
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS MONUMENT IS THE PERMANENT LOCATION OF MOBLAS-4.

Differential Coordinates FROM Observing Monument 7110 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-04

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	MONUMENT PEAK NCMN NO. 1 1983	-0.126	15.793	20.408
7220	ARIES ORION STA 7220 1981	-14.270	6.871	-0.596
7274	MONUMENT PEAK NCMN 1983	-11.377	7.795	2.522

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	MONUMENT PEAK NCMN NO. 1 1983	24.787	-7.139	-0.745
7220	ARIES ORION STA 7220 1981	-0.607	-15.837	-0.160
7274	MONUMENT PEAK NCMN 1983	3.160	-13.658	-0.242

-- MONUMENT INFORMATION --

(Continued)

Site Number: 701
Current Site Name: MONUMENT PEAK
Location: MOUNT LAGUNA, CA

Monument Number: 7220
Type of Monument: 10'' X 10'' STEEL PLATE
Monument Inscription: ARIES ORION STA 7220 1981
Systems Using Monument: MOBILE VLBI

Latitude: N 32 53' 30.00674''
Longitude: W 116 25' 19.11484''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 1845.416 meters
Survey Source/Date Reported: NGS/01-FEB-84
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THE PLATE HAS TWO PUNCH MARKS. THE CENTER PUNCH IS THE
SURVEY REFERENCE POINT.

Differential Coordinates FROM Observing Monument 7220 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-04

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	MONUMENT PEAK NCMN NO. 1 1983	14.143	8.921	21.004
7110	ORT STATION 7110 1981	14.270	-6.871	0.596
7274	MONUMENT PEAK NCMN 1983	2.892	0.924	3.119

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	MONUMENT PEAK NCMN NO. 1 1983	25.393	8.697	-0.585
7110	ORT STATION 7110 1981	0.607	15.837	0.160
7274	MONUMENT PEAK NCMN 1983	3.767	2.179	-0.082

-- MONUMENT INFORMATION --

(Continued)

Site Number: 701
Current Site Name: MONUMENT PEAK
Location: MOUNT LAGUNA, CA

Monument Number: 7274
Type of Monument: STANDARD NGS DISK
Monument Inscription: MONUMENT PEAK NCMN 1983
Systems Using Monument: MOBILE VLBI

Latitude: N 32 53' 30.12899''
Longitude: W 116 25' 19.03104''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 1845.334 meters
Survey Source/Date Reported: BFEC 12/83-NGS/03-FEB-84
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7274 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-04

Mon. Number	Monument Inscription	----- Differential Coordinates ----- X	Y	Z
--	MONUMENT PEAK NCMN NO. 1 1983	11.251	7.997	17.885
7110	ORT STATION 7110 1981	11.377	-7.795	-2.522
7220	ARIES ORION STA 7220 1981	-2.892	-0.924	-3.119

Mon. Number	Monument Inscription	----- Differential Coordinates ----- North	East	Up
--	MONUMENT PEAK NCMN NO. 1 1983	21.626	6.518	-0.504
7110	ORT STATION 7110 1981	-3.160	13.658	0.242
7220	ARIES ORION STA 7220 1981	-3.767	-2.179	0.082

-- SITE SKETCH --

ORIGINAL PAGE IS
OF POOR QUALITY

Site Number: 701
Current Site Name: MONUMENT PEAK
Location: MOUNT LAGUNA, CA

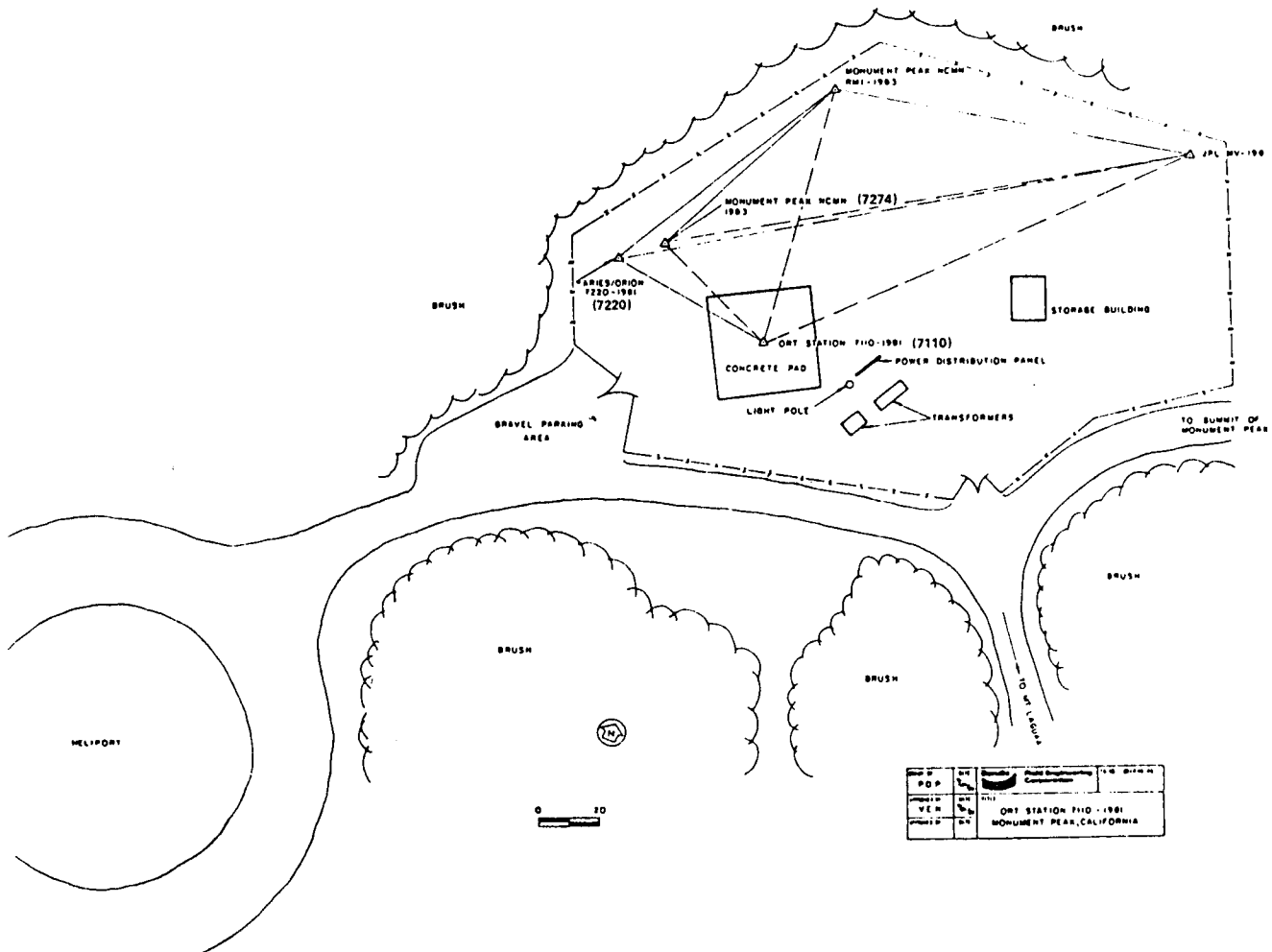


Figure 4-MON PK. MONUMENT PEAK Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 701
Current Site Name: MONUMENT PEAK
Location: MOUNT LAGUNA, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7110	MOBLAS-3	71100301	15-JUL-81	30-JUN-83	YES
7110	MOBLAS-4	71100402	15-AUG-83	12-NOV-86	YES
7110	MOBLAS-4	71100403	20-NOV-86	---	YES
7220	TLRS-1	72201101	30-AUG-83	02-NOV-83	YES
7220	TLRS-1	72201102	28-DEC-84	10-JAN-85	YES
7220	TLRS-1	72201103	13-JAN-85	27-FEB-85	YES
7220	TLRS-1	72201104	03-MAR-85	23-MAR-85	YES
7220	TLRS-1	72201105	24-MAR-85	13-MAY-85	YES
7274	TLRS-1	72741101	16-MAY-85	18-JUL-85	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7220	MV-2	72205201	14-MAY-81	14-MAY-81	YES
7220	MV-2/3	72205202	15-OCT-82	17-OCT-82	YES
7220	MV-2/3	72205202	18-OCT-82	18-OCT-82	YES
7220	MV-3	72205303	27-JUN-83	28-JUN-83	YES
7220	MV-3	72205304	05-NOV-83	07-NOV-83	YES
7220	MV-3	72205304	08-NOV-83	08-NOV-83	YES
7274	MV-3	72745301	12-APR-84	13-APR-84	NO
7274	MV-2	72745202	12-JAN-85	13-JAN-85	NO
7274	MV-2	72745203	01-MAR-85	02-MAR-85	NO
7274	MV-2	72745204	12-MAY-85	15-MAY-85	YES
7274	MV-3	72745305	05-NOV-85	06-NOV-85	YES
7274	MV-3	72745306	09-DEC-85	11-DEC-85	YES
7274	MV-3	72745307	05-JAN-86	06-JAN-86	YES
7274	MV-2	72745208	23-FEB-86	24-FEB-86	YES
7274	MV-2	72745209	07-APR-86	08-APR-86	YES
7274	MV-2	72745210	17-MAY-86	22-MAY-86	YES
7274	MV-2	72745211	19-OCT-86	20-OCT-86	YES
7274	MV-2	72745212	26-OCT-86	30-OCT-86	YES
7274	MV-3	72745313	10-DEC-86	11-DEC-86	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 701
Current Site Name: MONUMENT PEAK
Location: MOUNT LAGUNA, CA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7274	MV-3	72745314	08-FEB-87	10-FEB-87	YES
7274	MV-2	72745215	22-MAR-87	23-MAR-87	NO
7274	MV-2	72745216	14-MAY-87	15-MAY-87	NO
7274	MV-2	72745217	28-OCT-87	29-OCT-87	NO
7274	MV-2	72745218	04-DEC-87	06-DEC-87	NO

-- SITE INFORMATION --

Site Number: 801

Current Site Name: NOME

Other Site Name:

Location: NOME, AK

Geographic Region: ALASKA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION.

Site Description: THE SITE IS LOCATED IN NORTHERN ALASKA OFF THE COAST OF THE BERING SEA. THE STATION IS LOCATED ON A WHITE ALICE SITE ON ANVIL MOUNTAIN 4.5 MILES NORTH OF THE FISHING TOWN OF NOME. THE SITE CAN ACCOMMODATE A MOBILE VLBI SYSTEM.

Site Topo Map: NOME (C-1), ALASKA. N6430-W16500/15 X 30 , 1950, U.S.G.S., WASHINGTON, D.C. 20242

-- GEOLOGICAL INFORMATION --

Geological Province: WESTERN ALASKAN MAINLAND

Local Geology: PALEOZOIC METAMORPHIC ROCK (SCHIST) CLOSER TO PHYLLITE AT WHITE ALICE SITE.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 801
 Current Site Name: NOME
 Location: NOME, AK
 Number of Observing Monuments: 1
 Surveyed into National Network? NO

Monument Number: 7279
 Type of Monument: NGS MODIFIED SLEEVED CLASS A BENCH MARK
 Monument Inscription: NONE
 Systems Using Monument: MV-2, MV-3

Latitude: N 64 33' 45.5487''
 Longitude: W 165 22' 17.4838''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 308.967 meters
 Survey Source/Date Reported: NGS GPS RESULTS/01-JAN-86
 Datum/Ellipsoid: WGS 72

Comments: NONE

Differential Coordinates FROM Observing Monument 7279 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS GPS RESULTS JANUARY 1986

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	ANVI	-387.463	757.745	-88.221
--	BARN	-4278.608	-772.784	-2379.800
--	NOM 1	-3.555	-49.068	-12.262

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	NOM 1	-19.564	46.579	-4.273

-- SITE SKETCH --

Site Number: 801
Current Site Name: NOME
Location: NOME, AK

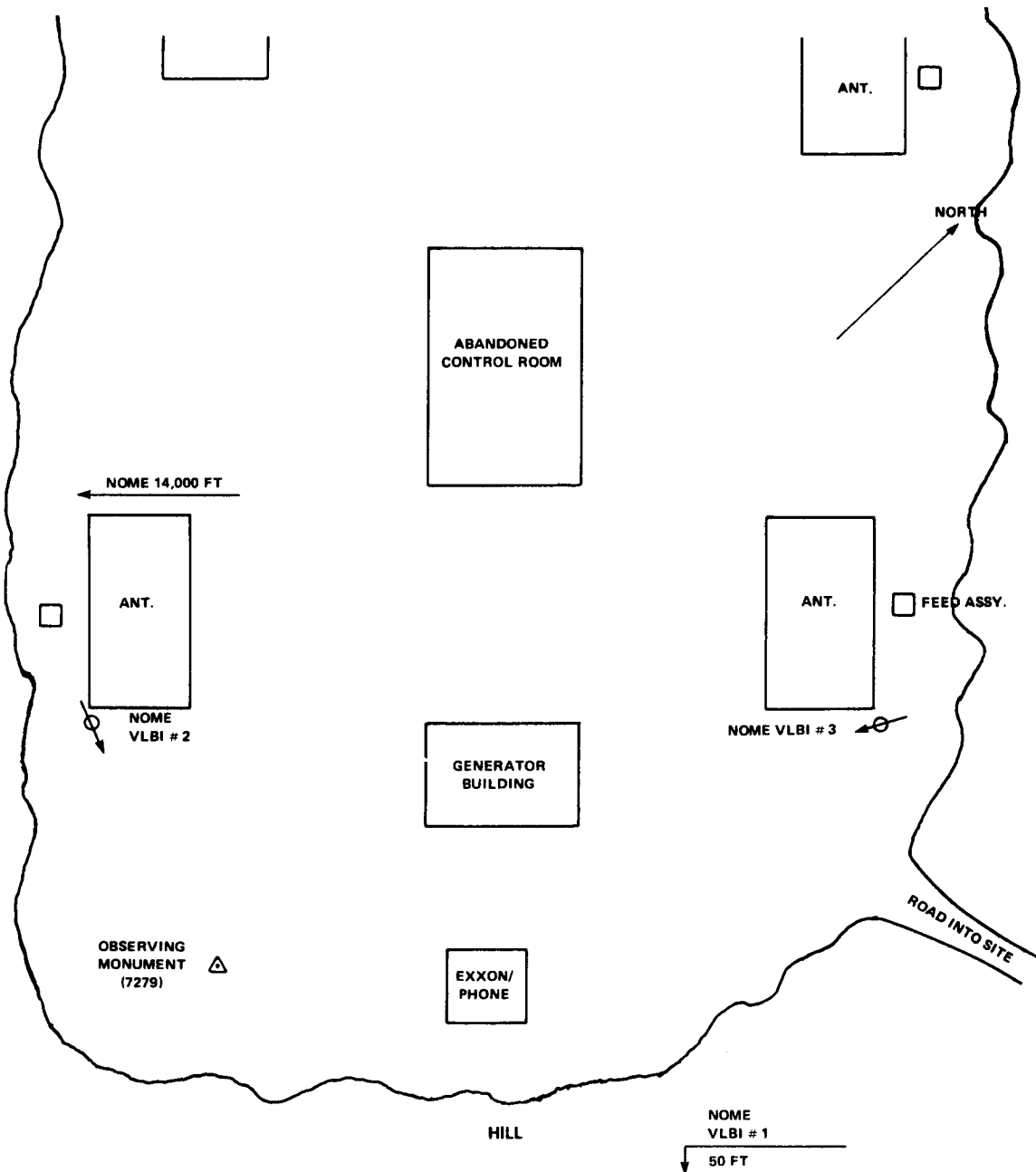


Figure 4-NOME. NOME Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 801
Current Site Name: NOME
Location: NOME, AK

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7279	MV-3	72795301	14-JUL-84	25-JUL-84	YES
7279	MV-2	72795202	18-JUL-85	25-JUL-85	YES
7279	MV-2	72795203	21-JUL-86	01-AUG-86	YES

-- SITE INFORMATION --

Site Number: 201

Current Site Name: OCOTILLO
Other Site Name: SIGNAL MOUNTAIN
Location: OCOTILLO, CA
Geographic Region: CALIFORNIA
Tectonic Plate: PACIFIC

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION.

Site Description: THE SITE IS LOCATED ABOUT TWELVE MILES EAST-NORTHEAST OF OCOTILLO, CALIFORNIA ALONG THE SOUTH SIDE OF THE IMPERIAL COUNTY HIGHWAY S-80 (OLD U.S. HIGHWAY 80) IN THE CENTER OF AN ABANDONED ROAD BETWEEN THE HIGHWAY AND RAILROAD TRACKS. THE MONUMENTED PAD IS COMPATIBLE FOR OCCUPATION BY MOBILE VLBI SYSTEMS FOR VLBI MEASUREMENTS.

Site Topo Map: PLASTER CITY, CALIFORNIA. N3245-W11545/7.5, U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: IMPERIAL VALLEY

Local Geology: QUATERNARY ALLUVIUM. THE STATION IS ON THE "SLUSHY" EDGE OF PACIFIC PLATE.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 201
 Current Site Name: OCOTILLO
 Location: OCOTILLO, CA
 Number of Observing Monuments: 1
 Surveyed into National Network? NO

Monument Number: 7270
 Type of Monument: NGS STATION DISK
 Monument Inscription: OCOTILLO NCMN 1982
 Systems Using Monument: MOBILE VLBI

Latitude: N 32 47' 24.28934''
 Longitude: W 115 47' 46.52283''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: -18.133 meters
 Survey Source/Date Reported: NGS GPS RESULTS/01-JUL-87
 Datum/Ellipsoid: WGS 1972

Comments: NONE

Differential Coordinates FROM Observing Monument 7270 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS GPS RESULTS JULY 1987

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	DIXIE 1934	39.006	39.874	82.968
--	OCOTILLO RM2	-56.950	7.569	-27.712
--	OCOTILLO RM4	39.666	-21.645	-3.600

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	DIXIE 1934	98.383	17.767	0.483
--	OCOTILLO RM2	-33.027	-54.569	0.097
--	OCOTILLO RM4	-4.232	45.132	-0.078

-- SITE SKETCH --

Site Number: 201
Current Site Name: OCOTILLO
Location: OCOTILLO, CA

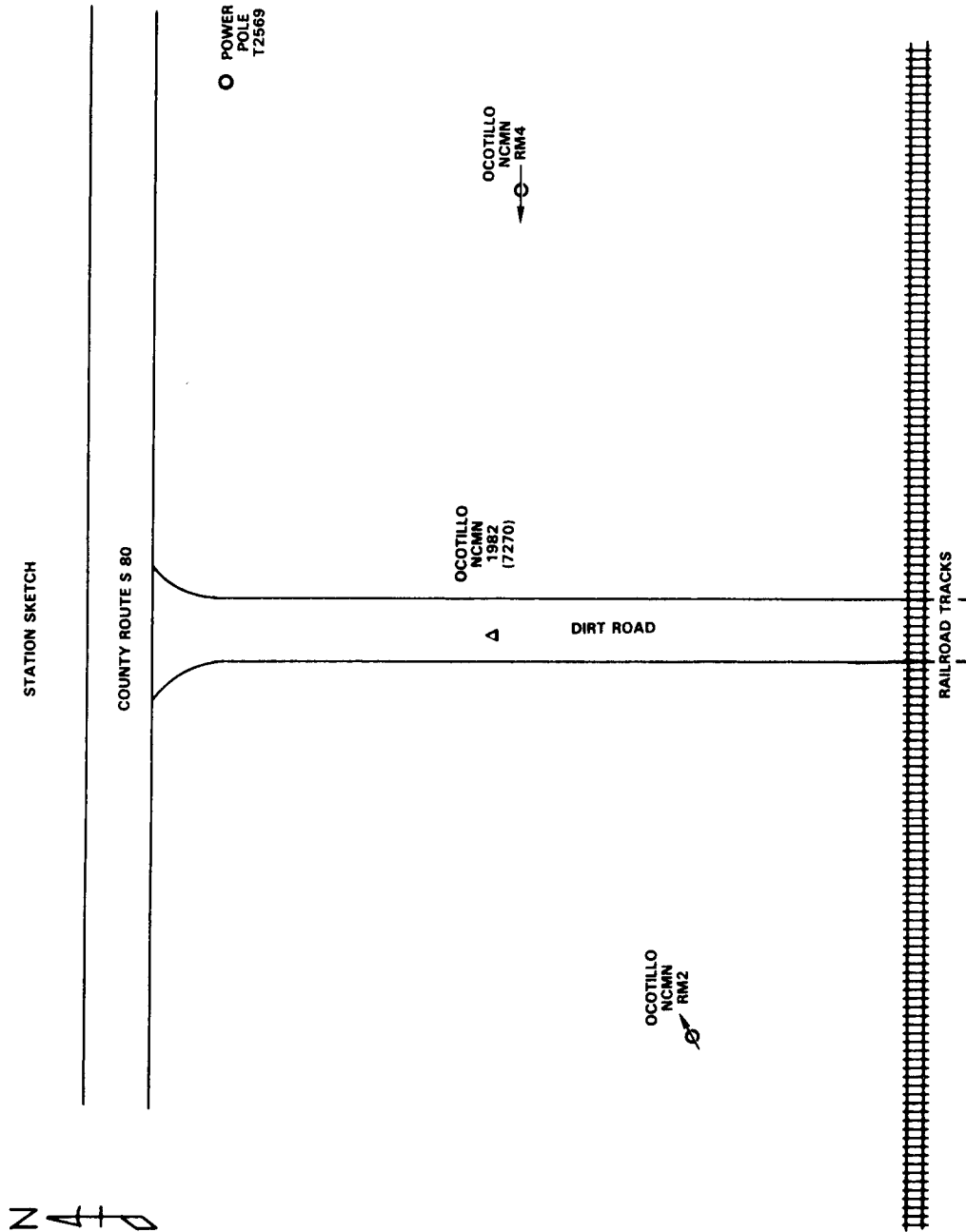


Figure 4-OCTILO. OCOTILLO Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 201
 Current Site Name: OCOTILLO
 Location: OCOTILLO, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7270	MV-3	72705301	10-NOV-83	13-NOV-83	NO
7270	MV-2	72705202	03-MAR-84	04-MAR-84	YES
7270	MV-2	72705203	15-JAN-85	16-JAN-85	YES
7270	MV-3	72705304	04-MAR-85	05-MAR-85	YES

-- SITE INFORMATION --

Site Number: 120

Current Site Name: ONSALA
Other Site Name:
Location: ONSALA, SWEDEN
Geographic Region: EUROPE
Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, PLATE STABILITY, POLAR MOTION/EARTH ROTATION, AND VLBI TECHNIQUE DEVELOPMENT.

Site Description: THE STATION IS LOCATED AT THE ONSALA SPACE OBSERVATORY IN ONSALA, SWEDEN. AT TYPICAL VLBI SITES, BOTH X- AND S-BANDS ARE RECEIVED BY THE SAME ANTENNA. HOWEVER, AT ONSALA, ONE ANTENNA IS USED FOR EACH FREQUENCY: THE 26.5 METER ANTENNA RECEIVES S-BAND AND THE 20-METER ANTENNA RECEIVES X-BAND SIGNALS. ALL OF THE RESULTS ARE REFERED BACK TO THE REFERENCE POINT OF THE 20-METER ANTENNA.

Site Topo Map: UNKNOWN

-- GEOLOGICAL INFORMATION --

Geological Province: ARCHAEOAN MOUNTAIN ROCKS, SOUTHWEST FENNOSCANDIA, 1200-1500 MILLION YEARS.

Local Geology: SOLID GRANITE AND GNEISS.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 120
 Current Site Name: ONSALA
 Location: ONSALA, SWEDEN
 Number of Observing Monuments: 2
 Surveyed into National Network? YES

Monument Number: 7212
 Type of Monument: INTERSECTION OF AXES OF THE ANTENNA
 Monument Inscription: NONE
 Systems Using Monument: 25.6 METER VLBI ANTENNA

Latitude: N 57 23' 36.9778''
 Longitude: E 11 55' 08.4692''
 Elevation Above MSL (Geoid): 24.38 meters
 Height Above Ellipsoid: NOT AVAILABLE
 Survey Source/Date Reported: ELIASSON/01-FEB-86
 Datum/Ellipsoid: EUROPEAN DATUM 50

Comments: THIS ANTENNA RECEIVES ONLY S-BAND SIGNALS. ALL DATA IS
 TRANSFERRED TO THE 20-METER ANTENNA REFERENCE POINT.

Differential Coordinates FROM Observing Monument 7212 TO
 Reference Monuments and Other Observing Monuments

Data Source: LUNDQUIST, CHALMERS UNIVERSITY OF TECHNOLOGY

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	1975 DOPPLER REFERENCE PT. (1001)	-60.506	65.157	11.443
--	DOPPLER REFERENCE POINT NO. 3	-307.516	411.023	122.831
--	SWEDISH NATIONAL LAND SURVEY TRI.	-202.197	5.746	138.871
7213	NONE (13-1)	-360.106	451.487	166.752

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	1975 DOPPLER REFERENCE PT. (1001)	44.701	76.249	-15.011

-- MONUMENT INFORMATION --

(Continued)

Site Number: 120
Current Site Name: ONSALA
Location: ONSALA, SWEDEN

Monument Number: 7213
Type of Monument: INTERSECTION OF AXES OF THE ANTENNA
Monument Inscription: NONE
Systems Using Monument: 20 METER VLBI ANTENNA

Latitude: N 57 23' 46.9364''
Longitude: E 11 55' 39.3709''
Elevation Above MSL (Geoid): 25.26 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: ELIASSON/01-FEB-86
Datum/Ellipsoid: E.D. 50

Comments: THIS ANTENNA RECEIVES X-BAND SIGNALS ONLY. ALL BASELINE
RESULTS REFER TO THIS ANTENNA.

Differential Coordinates FROM Observing Monument 7213 TO
Reference Monuments and Other Observing Monuments

Data Source: ELIASSON

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	1975 DOPPLER REFERENCE PT. (1001)	299.601	-386.330	-155.309
--	1978 DOPPLER REFERENCE POINT (3)	52.590	-40.464	-43.921
--	SWEDISH NATIONAL LAND SURVEY TRI.	157.909	-445.741	-27.881
7212	NONE (1000-1)	360.106	-451.487	-166.752

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	1978 DOPPLER REFERENCE POINT (3)	-59.965	-50.462	-13.781

-- SITE SKETCH --

Site Number: 120
Current Site Name: ONSALA
Location: ONSALA, SWEDEN

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OF POOR QUALITY

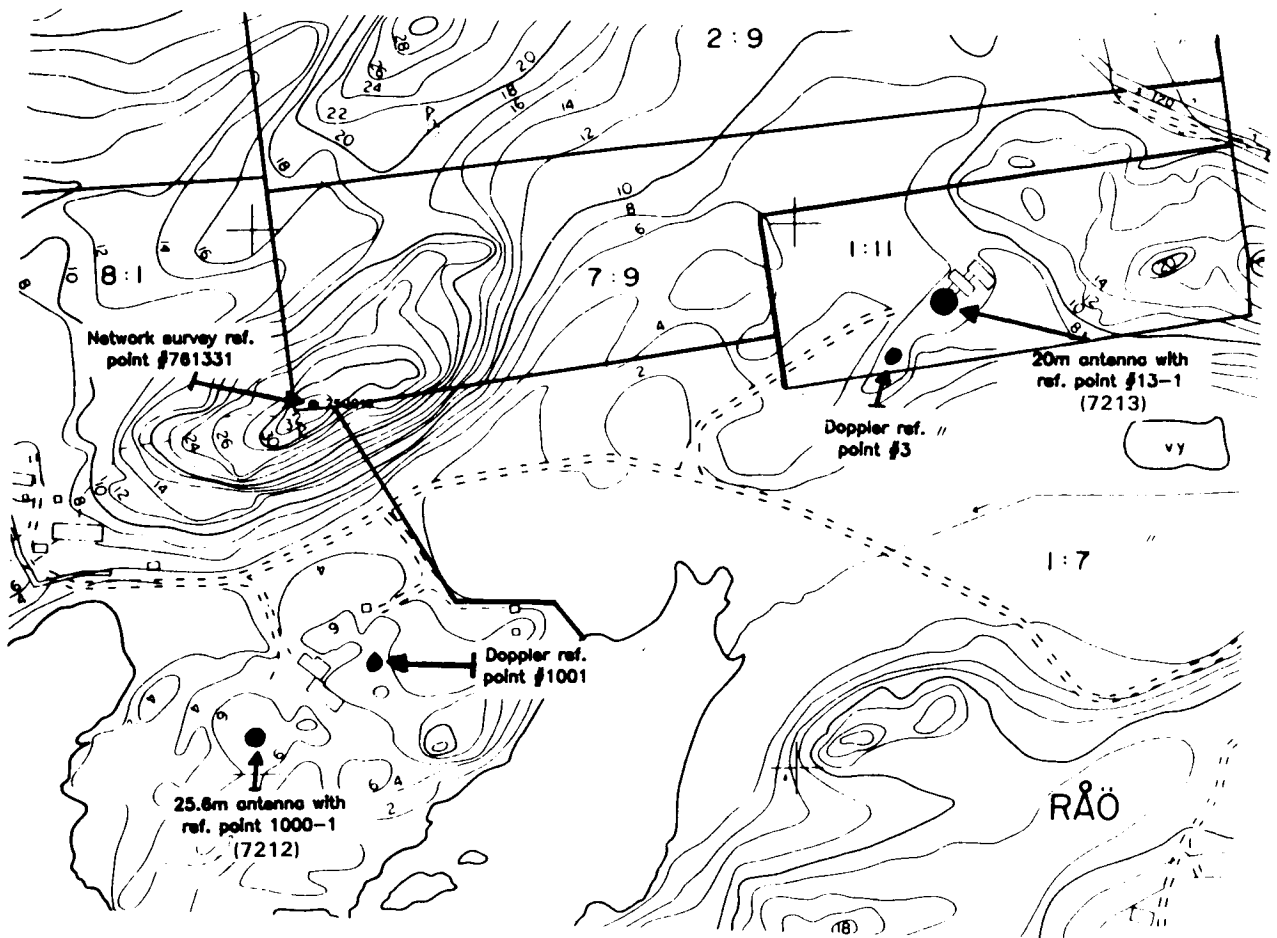


Figure 4-ONSALA. ONSALA Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 120
Current Site Name: ONSALA
Location: ONSALA, SWEDEN

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?

-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7213	ONSALA60	72137701	24-SEP-77	24-SEP-77	YES
7213	ONSALA60	72137701	24-FEB-78	24-FEB-78	YES
7213	ONSALA60	72137701	17-MAY-78	17-MAY-78	YES
7213	ONSALA60	72137701	26-JUL-80	26-JUL-80	YES
7213	ONSALA60	72137701	27-JUL-80	27-JUL-80	YES
7213	ONSALA60	72137701	26-SEP-80	26-SEP-80	YES
7213	ONSALA60	72137701	27-SEP-80	27-SEP-80	YES
7213	ONSALA60	72137701	28-SEP-80	28-SEP-80	YES
7213	ONSALA60	72137701	29-SEP-80	29-SEP-80	YES
7213	ONSALA60	72137701	30-SEP-80	30-SEP-80	YES
7213	ONSALA60	72137701	01-OCT-80	01-OCT-80	YES
7213	ONSALA60	72137701	02-OCT-80	02-OCT-80	YES
7213	ONSALA60	72137701	16-OCT-80	16-OCT-80	YES
7213	ONSALA60	72137701	17-OCT-80	17-OCT-80	YES
7213	ONSALA60	72137701	18-OCT-80	18-OCT-80	YES
7213	ONSALA60	72137701	19-OCT-80	19-OCT-80	YES
7213	ONSALA60	72137701	20-OCT-80	20-OCT-80	YES
7213	ONSALA60	72137701	21-OCT-80	21-OCT-80	YES
7213	ONSALA60	72137701	22-OCT-80	22-OCT-80	YES
7213	ONSALA60	72137701	01-DEC-80	01-DEC-80	YES
7213	ONSALA60	72137701	19-DEC-80	19-DEC-80	YES
7213	ONSALA60	72137701	22-JAN-81	22-JAN-81	YES
7213	ONSALA60	72137701	27-FEB-81	27-FEB-81	YES
7213	ONSALA60	72137701	21-OCT-81	21-OCT-81	YES
7213	ONSALA60	72137701	18-NOV-81	18-NOV-81	YES
7213	ONSALA60	72137701	19-NOV-81	19-NOV-81	YES
7213	ONSALA60	72137701	16-JUN-82	16-JUN-82	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 120
Current Site Name: ONSALA
Location: ONSALA, SWEDEN

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7213	ONSALA60	72137701	17-JUN-82	17-JUN-82	YES
7213	ONSALA60	72137701	18-JUN-82	18-JUN-82	YES
7213	ONSALA60	72137701	19-JUN-82	19-JUN-82	YES
7213	ONSALA60	72137701	20-JUN-82	20-JUN-82	YES
7213	ONSALA60	72137701	21-JUN-82	21-JUN-82	YES
7213	ONSALA60	72137701	20-SEP-82	20-SEP-82	YES
7213	ONSALA60	72137701	18-OCT-82	18-OCT-82	YES
7213	ONSALA60	72137701	15-NOV-82	15-NOV-82	YES
7213	ONSALA60	72137701	15-DEC-82	15-DEC-82	YES
7213	ONSALA60	72137701	16-DEC-82	16-DEC-82	YES
7213	ONSALA60	72137701	07-FEB-83	07-FEB-83	YES
7213	ONSALA60	72137701	28-FEB-83	28-FEB-83	YES
7213	ONSALA60	72137701	14-MAR-83	14-MAR-83	YES
7213	ONSALA60	72137701	18-APR-83	18-APR-83	YES
7213	ONSALA60	72137701	05-MAY-83	05-MAY-83	YES
7213	ONSALA60	72137701	16-MAY-83	16-MAY-83	YES
7213	ONSALA60	72137701	13-JUN-83	13-JUN-83	YES
7213	ONSALA60	72137701	29-AUG-83	29-AUG-83	YES
7213	ONSALA60	72137701	30-AUG-83	30-AUG-83	YES
7213	ONSALA60	72137701	22-SEP-83	22-SEP-83	YES
7213	ONSALA60	72137701	23-SEP-83	23-SEP-83	YES
7213	ONSALA60	72137701	27-OCT-83	27-OCT-83	YES
7213	ONSALA60	72137701	28-OCT-83	28-OCT-83	YES
7213	ONSALA60	72137701	16-NOV-83	16-NOV-83	YES
7213	ONSALA60	72137701	17-NOV-83	17-NOV-83	YES
7213	ONSALA60	72137701	21-DEC-83	21-DEC-83	YES
7213	ONSALA60	72137701	22-DEC-83	22-DEC-83	YES
7213	ONSALA60	72137701	24-JAN-84	24-JAN-84	YES
7213	ONSALA60	72137701	25-JAN-84	26-JAN-84	YES
7213	ONSALA60	72137701	24-FEB-84	25-FEB-84	YES
7213	ONSALA60	72137701	14-MAR-84	14-MAR-84	YES
7213	ONSALA60	72137701	15-MAR-84	16-MAR-84	YES
7213	ONSALA60	72137701	18-APR-84	18-APR-84	YES
7213	ONSALA60	72137701	19-APR-84	20-APR-84	YES
7213	ONSALA60	72137701	18-MAY-84	18-MAY-84	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 120
Current Site Name: ONSALA
Location: ONSALA, SWEDEN

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7213	ONSALA60	72137701	19-MAY-84	20-MAY-84	YES
7213	ONSALA60	72137701	30-AUG-84	31-AUG-84	YES
7213	ONSALA60	72137701	02-SEP-84	03-SEP-84	YES
7213	ONSALA60	72137701	23-JAN-85	23-JAN-85	YES
7213	ONSALA60	72137701	24-JAN-85	24-JAN-85	YES
7213	ONSALA60	72137701	27-FEB-85	27-FEB-85	YES
7213	ONSALA60	72137701	04-MAR-85	04-MAR-85	YES
7213	ONSALA60	72137701	05-MAR-85	05-MAR-85	YES
7213	ONSALA60	72137701	23-APR-85	23-APR-85	YES
7213	ONSALA60	72137701	24-APR-85	24-APR-85	YES
7213	ONSALA60	72137701	08-MAY-85	08-MAY-85	YES
7213	ONSALA60	72137701	09-MAY-85	09-MAY-85	YES
7213	ONSALA60	72137701	17-JUN-85	17-JUN-85	YES
7213	ONSALA60	72137701	18-JUN-85	18-JUN-85	YES
7213	ONSALA60	72137701	19-JUN-85	19-JUN-85	YES
7213	ONSALA60	72137701	16-AUG-85	16-AUG-85	YES
7213	ONSALA60	72137701	10-SEP-85	10-SEP-85	YES
7213	ONSALA60	72137701	11-SEP-85	11-SEP-85	YES
7213	ONSALA60	72137701	25-OCT-85	25-OCT-85	YES
7213	ONSALA60	72137701	29-OCT-85	29-OCT-85	YES
7213	ONSALA60	72137701	19-NOV-85	19-NOV-85	YES
7213	ONSALA60	72137701	20-NOV-85	20-NOV-85	YES
7213	ONSALA60	72137701	21-NOV-85	21-NOV-85	YES
7213	ONSALA60	72137701	09-DEC-85	09-DEC-85	YES
7213	ONSALA60	72137701	10-DEC-85	10-DEC-85	YES
7213	ONSALA60	72137701	14-JAN-86	14-JAN-86	YES
7213	ONSALA60	72137701	20-MAR-86	20-MAR-86	YES
7213	ONSALA60	72137701	04-APR-86	04-APR-86	YES
7213	ONSALA60	72137701	14-MAY-86	14-MAY-86	YES
7213	ONSALA60	72137701	16-JUN-86	16-JUN-86	YES
7213	ONSALA60	72137701	18-JUN-86	18-JUN-86	YES
7213	ONSALA60	72137701	25-AUG-86	25-AUG-86	YES
7213	ONSALA60	72137701	16-SEP-86	16-SEP-86	YES
7213	ONSALA60	72137701	16-OCT-86	16-OCT-86	YES
7213	ONSALA60	72137701	05-NOV-86	05-NOV-86	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 120
Current Site Name: ONSALA
Location: ONSALA, SWEDEN

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7213	ONSALA60	72137701	08-DEC-86	08-DEC-86	YES
7213	ONSALA60	72137701	03-FEB-87	03-FEB-87	NO
7213	ONSALA60	72137701	25-MAR-87	25-MAR-87	NO
7213	ONSALA60	72137701	09-APR-87	09-APR-87	NO
7213	ONSALA60	72137701	04-MAY-87	04-MAY-87	NO
7213	ONSALA60	72137701	23-JUN-87	23-JUN-87	NO
7213	ONSALA60	72137701	24-JUN-87	24-JUN-87	NO
7213	ONSALA60	72137701	25-AUG-87	25-AUG-87	NO
7213	ONSALA60	72137701	16-SEP-87	16-SEP-87	NO
7213	ONSALA60	72137701	16-OCT-87	16-OCT-87	NO
7213	ONSALA60	72137701	03-NOV-87	03-NOV-87	NO
7213	ONSALA60	72137701	05-NOV-87	05-NOV-87	NO
7213	ONSALA60	72137701	08-DEC-87	08-DEC-87	NO

-- SITE INFORMATION --

Site Number: 134

Current Site Name: ORRORAL

Other Site Name:

Location: ORRORAL VALLEY, AUSTRALIA

Geographic Region: AUSTRALIA

Tectonic Plate: AUSTRALIAN-INDIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, PLATE STABILITY, POLAR MOTION/EARTH ROTATION, AND SLR TECHNIQUE DEVELOPMENT.

Site Description: THE STATION IS LOCATED IN THE ORRORAL VALLEY, FORTY MILES SOUTHWEST OF THE CITY OF CANBERRA IN THE SOUTHERN PART OF THE AUSTRALIAN CAPITAL TERRITORY. THE NATMAP LASER RANGING SYSTEM AT ORRORAL IS RANGING TO BOTH LAGEOS AND THE MOON. THIS STATION IS UNDER CONSIDERATION AS A BASE SITE FOR GPS PROGRAM.

Site Topo Map: 1:100,000 SERIES 'ACT SPECIAL' DIVISION OF NATIONAL MAPPING, AUSTRALIA

-- GEOLOGICAL INFORMATION --

Geological Province: TASMAN GEOSYNCLINAL ZONE

Local Geology: LATE SILURIAN SHANNON'S FLAT ADAMELLITE (MARRUMBRIDGE BATHOLITH)

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 134
 Current Site Name: ORRORAL
 Location: ORRORAL VALLEY, AUSTRALIA
 Number of Observing Monuments: 2
 Surveyed into National Network? YES

Monument Number: 7843
 Type of Monument: REFERENCE POINT ON LASER (#7 MIRROR)
 Monument Inscription: NONE
 Systems Using Monument: ORRORAL VALLEY LASER RANGING SYSTEM

Latitude: S 35 38' 16.1396''
 Longitude: E 148 56' 17.0900''
 Elevation Above MSL (Geoid): 1345.934 meters
 Height Above Ellipsoid: 1350.834 meters
 Survey Source/Date Reported: DEPARTMENT OF RESOURCES AND ENERGY, DIVISION
 OF THE NATIONAL MAPPING/08-APR-86
 Datum/Ellipsoid: AUSTRALIAN GEODETIC DATUM/AUSTRALIAN
 NATIONAL SPHEROID

Comments: THIS SYSTEM IS ALSO REFERENCED AS NATMAP.

Differential Coordinates FROM Observing Monument 7843 TO
 Reference Monuments and Other Observing Monuments

Data Source: DIVISION OF NATIONAL MAPPING

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	LLR PILLAR 2	20.413	-2.983	-13.040
--	LLR PILLAR 3	2.931	6.965	13.786
--	LR1A (OLD LLR)	0.553	-0.324	-2.009
--	NM/C/106 (LLR PILLAR 1)	0.279	-22.260	-10.419
--	ORRORAL CENTRE G.M.	6.849	-4.146	2.934
7943	NONE (SAO LASER CENTRE)	-1072.121	-992.939	1255.100

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	LLR PILLAR 2	-21.517	-8.401	-7.864
--	LLR PILLAR 3	11.977	-7.243	-7.152
--	LR1A (OLD LLR)	-2.005	-0.047	0.650
--	NM/C/106 (LLR PILLAR 1)	-15.665	18.614	-3.457
--	ORRORAL CENTRE G.M.	-2.280	-0.028	-8.216
7943	NONE (SAO LASER CENTRE)	1228.523	1427.996	-400.999

-- MONUMENT INFORMATION --

(Continued)

Site Number: 134
Current Site Name: ORRORAL
Location: ORRORAL VALLEY, AUSTRALIA

Monument Number: 7943
Type of Monument: REFERENCE POINT ON LASER CENTER
Monument Inscription: NONE
Systems Using Monument: ORRLAS FIXED LASER (SAO-3)

Latitude: S 35 37' 35.3688''
Longitude: E 148 57' 12.8672''
Elevation Above MSL (Geoid): 944.935 meters
Height Above Ellipsoid: 949.835 meters
Survey Source/Date Reported: DEPARTMENT OF RESOURCES AND ENERGY DIVISION
OF THE NATIONAL MAPPING/08-APR-86
Datum/Ellipsoid: AUSTRALIAN GEODETIC

Comments: OPERATIONS OF THIS LASER HAVE BEEN DISCONTINUED AS OF MARCH 1982.

Differential Coordinates FROM Observing Monument 7943 TO
Reference Monuments and Other Observing Monuments

Data Source: DIVISION OF NATIONAL MAPPING

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	LLR PILLAR 2	1092.534	989.956	-1268.140
--	LLR PILLAR 3	1075.052	999.904	-1241.314
--	LR1A (OLD LLR)	1072.674	992.615	-1257.109
--	NM/C/106 (LLR PILLAR 1)	1072.400	970.679	-1265.519
--	ORRORAL CENTRE (OLD LLR)	1078.970	988.793	-1252.166
7843	----	1072.121	992.939	-1255.100

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

ORIGINAL PAGE IS
OF POOR QUALITY

-- SITE SKETCH --

Site Number: 134
Current Site Name: ORRORAL
Location: ORRORAL VALLEY, AUSTRALIA

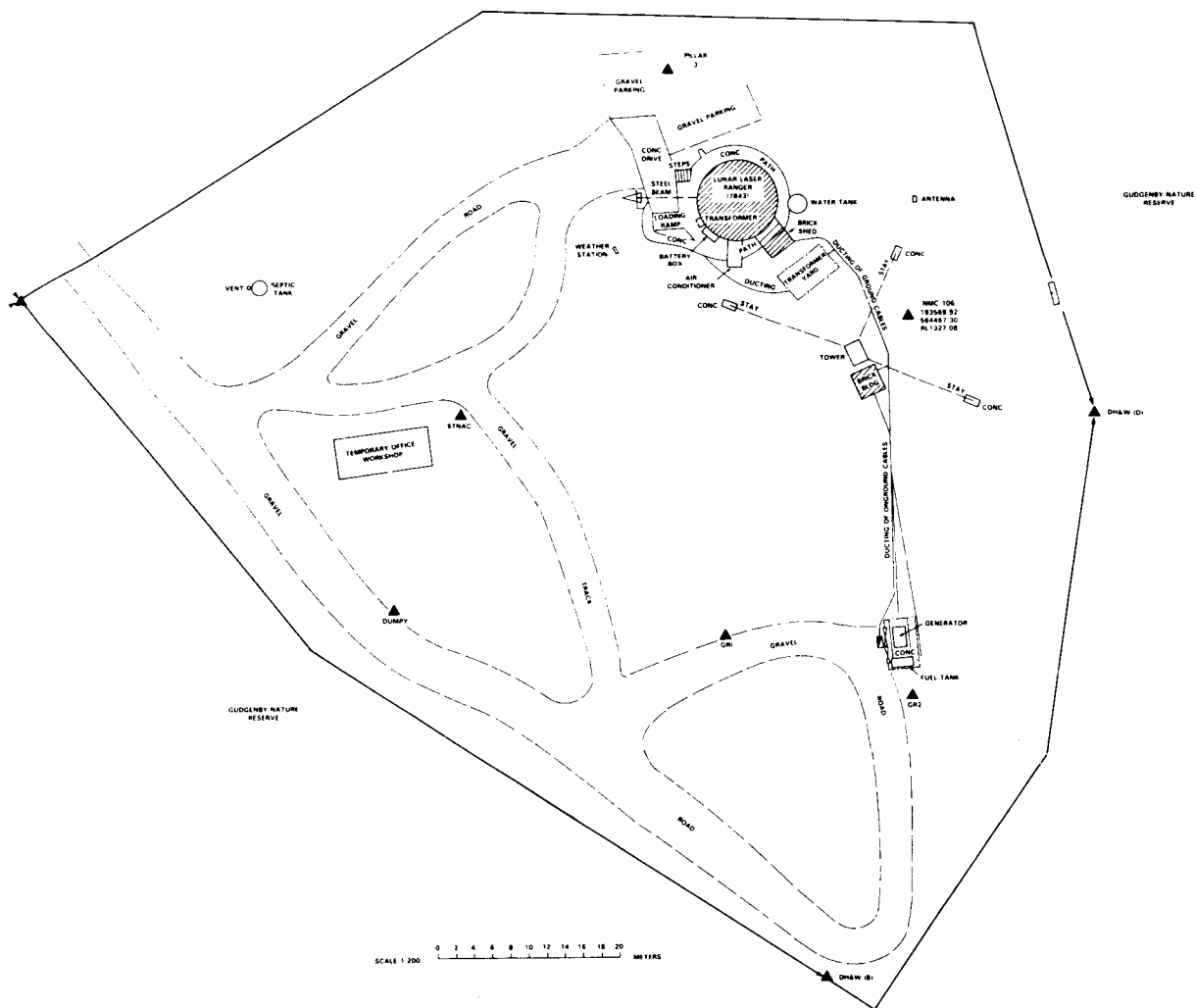


Figure 4-ORORAL. ORRORAL Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 134
 Current Site Name: ORRORAL
 Location: ORRORAL VALLEY, AUSTRALIA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7843	NLRS	78432501	01-AUG-84	---	YES
7943	SAO-3	79434201	15-JUN-76	10-MAR-82	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 1

Current Site Name: OTAY MOUNTAIN

Other Site Name:

Location: OTAY MOUNTAIN, SAN DIEGO, CA

Geographic Region: CALIFORNIA

Tectonic Plate: PACIFIC

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION AND GLOBAL PLATE MOTION.

Site Description: THE SITE IS LOCATED AT DOGHOUSE JUNCTION IN THE SAN YSIDRO MOUNTAINS, FIVE MILES FROM THE MEXICAN BORDER. IN MID 1979, MOBLAS OPERATIONS FROM THE STATION WERE DISCONTINUED BECAUSE OF POOR ROAD CONDITIONS. A MOBLAS PAD WAS CONSTRUCTED AT MONUMENT PEAK TO ALLOW CONTINUOUS LASER MEASUREMENTS IN THE REGION. THE ASTRONOMIC DOME PRESENTLY OVER THE OBSERVING MONUMENT WILL BE REMOVED TO ACCOMMODATE THE TLRS-3 OR -4.

Site Topo Map: OTAY MOUNTAIN, CALIFORNIA. N3236-W11645/7.5, 1972, U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: PENINSULA RANGES

Local Geology: JURASSIC-TRIASSIC METAVOLCANIC ROCK. THE STATION IS LOCATED ON THE PACIFIC TECTONIC PLATE WEST OF THE SAN ANDREAS FAULT.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 1
 Current Site Name: OTAY MOUNTAIN
 Location: OTAY MOUNTAIN, SAN DIEGO, CA
 Number of Observing Monuments: 2
 Surveyed into National Network? YES

Monument Number: 7062
 Type of Monument: CIRCULAR 5'' STEEL PLATE
 Monument Inscription: "X"
 Systems Using Monument: TLRS-2

Latitude: N 32 36' 02.43353''
 Longitude: W 116 50' 23.96611''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 996.975 meters
 Survey Source/Date Reported: NASA SURVEY, NGS HAVAGO ADJUSTMENT 87-01-14/
 14-JAN-87
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THE STATION NAME IS "SANDIE 1976". A DOME WAS CONSTRUCTED
 OVER THE PLATE TO HOUSE TLRS-2'S PREVIOUS CONFIGURATION.

Differential Coordinates FROM Observing Monument 7062 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 87-01-14

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	SANDIE 1976 NO. 2 1978 (DOP. 512)	16.549	-6.399	2.192
--	SANDIE NASA RM 1 1976	114.210	-109.056	-111.083
--	OTAY 1938 AZ MK 1976	109.744	-112.238	-122.350
--	SANDIE "A" POINT 1978	0.948	2.962	4.939
--	ARIES 9M ANT CEN OF AXES 7/79	-2.801	-7.032	0.599
7276	ARIES 7/79	-0.301	-2.092	-2.942

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	SANDIE 1976 NO. 2 1978 (DOP. 512)	2.797	17.655	-0.305
--	SANDIE "A" POINT 1978	5.815	-0.492	0.074
--	ARIES 9M ANT CEN OF AXES 7/79	-3.557	0.676	6.674
7276	ARIES 7/79	-3.557	0.676	0.102

-- MONUMENT INFORMATION --

(Continued)

Site Number: 1
Current Site Name: OTAY MOUNTAIN
Location: OTAY MOUNTAIN, SAN DIEGO, CA

Monument Number: 7276
Type of Monument: USC & GS REFERENCE MARK
Monument Inscription: ARIES 7/79
Systems Using Monument: MV-1

Latitude: N 32 36' 02.31807''
Longitude: W 116 50' 23.94019''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 997.076 meters
Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT 87-01-14/14-JAN-87
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: A ROUND AIR HOLE IN THE DISK WAS THE POINT OF OCCUPATION.
THE STATION NAME OF THIS MONUMENT IS "OTAY ARIES 1980".

Differential Coordinates FROM Observing Monument 7276 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 87-01-14

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	SANDIE 1976 NO.2 1978 (DOP. STA.)	16.850	-4.307	5.134
--	SANDIE NASA RM 1 1976	114.511	-106.964	-108.141
--	OTAY 1938 AZ MK 1976	110.045	-110.146	-119.408
--	SANDIE "A" POINT 1978	1.249	5.054	7.881
--	LASER CENTER OF AXES 8/72 MOBLAS	-1.072	-0.622	4.887
7062	"X"	0.301	2.092	2.942

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	SANDIE 1976 NO.2 1978 (DOP. STA.)	6.354	16.979	-0.407
--	SANDIE "A" POINT 1978	9.372	-1.168	-0.028
--	LASER CENTER OF AXES 8/72 MOBLAS	3.557	-0.676	3.508
7062	"X"	3.557	-0.676	-0.102

-- SITE SKETCH --

Site Number: 1
 Current Site Name: OTAY MOUNTAIN
 Location: OTAY MOUNTAIN, SAN DIEGO, CA

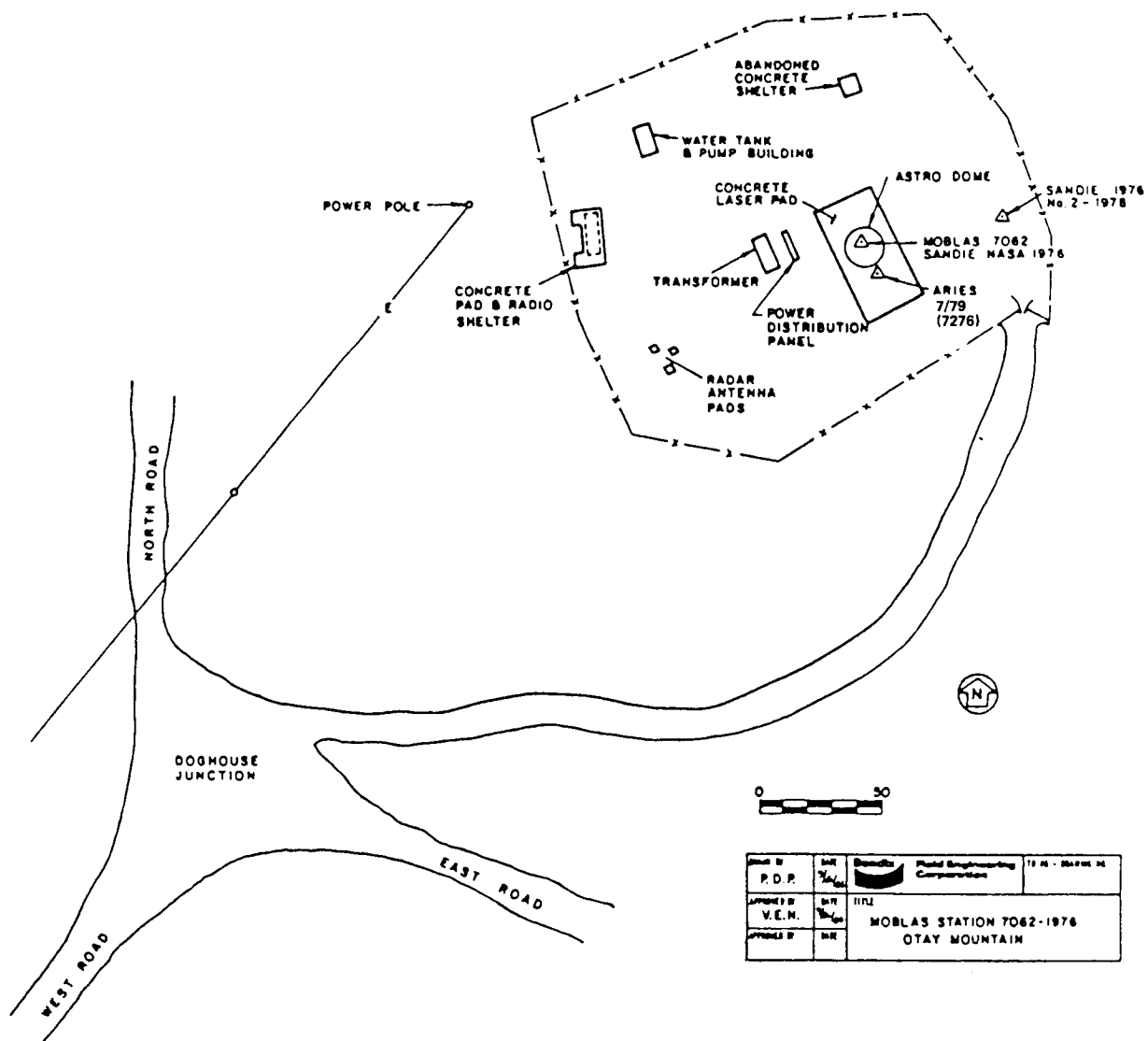


Figure 4-OTAY. OTAY MOUNTAIN Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 1
Current Site Name: OTAY MOUNTAIN
Location: OTAY MOUNTAIN, SAN DIEGO, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7062	MOBLAS-2	70620201	28-AUG-74	14-DEC-74	YES
7062	MOBLAS-3	70620302	14-SEP-76	30-APR-77	YES
7062	MOBLAS-3	70620303	29-JUN-78	30-MAY-79	YES
7062	TLRS-1	70621104	04-OCT-81	08-JAN-82	YES
7062	TLRS-2	70621205	12-SEP-83	04-JAN-84	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7276	MV-1	72765101	11-JUL-79	12-JUL-79	NO

-- SITE INFORMATION --

Site Number: 11

Current Site Name: OWENS VALLEY

Other Site Name:

Location: OWENS VALLEY RADIO OBS., BIG PINE, CA

Geographic Region: CALIFORNIA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, PLATE STABILITY, POLAR MOTION/EARTH ROTATION, REGIONAL DEFORMATION, AND INTERCOMPARISON OF MEASUREMENT TECHNIQUES.

Site Description: THE SITE IS LOCATED AT THE OWENS VALLEY RADIO OBSERVATORY, 4.5 MILES NORTHEAST OF BIG PINE, CALIFORNIA. BIG PINE IS IN THE OWENS RIVER VALLEY AND PARALLELS THE SIERRA NEVADAS ON THE EAST. A FIXED ANTENNA IS USED FOR VLBI MEASUREMENTS. A LASER PAD AT OWENS VALLEY PROVIDES VALIDATION DATA FOR THE VLBI TECHNIQUE. FOLLOWING THE CONSTRUCTION OF A BUILDING OVER THE ORIGINAL PAD, A SECOND STATION WAS ESTABLISHED.

Site Topo Map: BIG PINE, CALIFORNIA. N3700-W11815/15, 1850, U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: BASIN AND RANGE

Local Geology: QUATERNARY ALLUVIUM LOCALLY; EAST OF THE SAN ANDREAS FAULT.

Comments: THIS SITE IN CONJUNCTION WITH THE MOJAVE SITE WILL BE USED AS A GPS TEST AND CALIBRATION RANGE.

-- MONUMENT INFORMATION --

Site Number: 11
 Current Site Name: OWENS VALLEY
 Location: OWENS VALLEY RADIO OBS., BIG PINE, CA
 Number of Observing Monuments: 3
 Surveyed into National Network? YES

Monument Number: 7084
 Type of Monument: STANDARD NASA DISK
 Monument Inscription: GSFC MOBILE LASER NO. 7084
 Systems Using Monument: MOBLAS AND TLRS

Latitude: N 37 13' 55.90011''
 Longitude: W 118 17' 41.32013''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 1185.231 meters
 Survey Source/Date Reported: NASA-GSFC-BFEC, CODE 853/08-SEP-86
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS IS THE ORIGINAL SITE USED BY MOBLAS DURING THE FIRST
 OCCUPATION.

Differential Coordinates FROM Observing Monument 7084 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-08

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	BP ARIES 1 (DOP. 51105)	946.280	-623.619	-124.786
--	BP ARIES 2	1073.305	-627.363	-51.333
--	BP ARIES 3	947.181	-523.384	-10.403
--	MOBILE LASER 2	32.237	12.576	33.451
--	WEST MONOLITH	795.136	-467.223	-37.572
7114	MOBLAS 7114 1979	167.894	-57.492	37.858
7207	----	989.586	-604.375	-45.667

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	MOBILE LASER 2	42.579	22.424	-0.744

-- MONUMENT INFORMATION --

(Continued)

Site Number: 11
 Current Site Name: OWENS VALLEY
 Location: OWENS VALLEY RADIO OBS., BIG PINE, CA

Monument Number: 7114
 Type of Monument: STANDARD NASA DISK
 Monument Inscription: MOBLAS 7114 1979
 Systems Using Monument: MOBLAS AND TLRS

Latitude: N 37 13' 57.44593''
 Longitude: W 118 17' 34.21875''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 1185.082 meters
 Survey Source/Date Reported: NASA-GSFC-BFEC, CODE 853/08-SEP-86
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS SECOND MONUMENT WAS BUILT TO REPLACE MONUMENT 7084.

Differential Coordinates FROM Observing Monument 7114 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-08

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	BP ARIES 1 (DOP. 51105)	778.386	-566.127	-162.644
--	BP ARIES 2	905.412	-569.871	-89.191
--	BP ARIES 3	779.288	-465.892	-48.262
--	MOBILE LASER 2	-135.656	70.068	-4.408
--	WEST MONOLITH	627.242	-409.731	-75.430
7084	GSFC MOBILE LASER NO. 7084	-167.894	57.492	-37.858
7207	----	821.693	-546.883	-83.526

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 11
Current Site Name: OWENS VALLEY
Location: OWENS VALLEY RADIO OBS., BIG PINE, CA

Monument Number: 7207
Type of Monument: REFERENCED TO CENTER OF HORIZONTAL AXES
OF ANTENNA
Monument Inscription: NONE
Systems Using Monument: 40-METER FIXED VLBI ANTENNA

Latitude: N 37 13' 53.48024''
Longitude: W 118 16' 54.35995''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 1207.939 meters
Survey Source/Date Reported: NGS/08-SEP-86
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS ANTENNA IS ALSO REFERENCED AS OVRO 130.

Differential Coordinates FROM Observing Monument 7207 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-08

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	BP ARIES 1 (DOP. 51105)	-43.307	-19.244	-79.119
--	BP ARIES 2	83.719	-22.989	-5.665
--	BP ARIES 3	-42.405	80.991	35.264
--	MOBILE LASER 2	-957.349	616.951	79.118
--	WEST MONOLITH	-194.451	137.152	8.095
7084	GSFC MOBILE LASER NO. 7084	-989.586	604.375	45.667
7114	MOBLAS 7114 1979	-821.693	546.883	83.526

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	BP ARIES 1 (DOP. 51105)	-85.663	-29.018	-18.038
--	BP ARIES 2	7.242	84.617	-18.895
--	BP ARIES 3	59.071	-75.719	-19.452

-- MONUMENT INFORMATION --

(Continued)

Site Number: 11
Current Site Name: OWENS VALLEY
Location: OWENS VALLEY RADIO OBS., BIG PINE, CA

Monument Number: 7853
Type of Monument: STANDARD NASA DISK
Monument Inscription: 7853 JUL 87
Systems Using Monument: MOBILE VLBI

Latitude: N 38 13' 57.34129''
Longitude: W 118 17 37.08083''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 1178.084 meters
Survey Source/Date Reported: BFEC, NGS HAVAGO ADJUSTMENT/13-NOV-87
Datum/Ellipsoid: WGS 84

Comments: THIS NEW MONUMENT HAS TLRS BOLT INSERTS AND MTLRS MONUMENTS.

Differential Coordinates FROM Observing Monument 7853 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 87-11-13

Mon. Number	Monument Inscription	---- Differential Coordinates ---- X	Y	Z
--	7853 RM 1	24.078	23.511	41.918
--	7853 RM 2	31.939	-33.244	-19.930
--	7853 RM 3	-45.249	7.126	-21.016
--	REFERENCE POINT ON CALIBRATION PIER	242.140	-70.206	71.853
--	REFERENCE POINT ON CALIBRATION PIER	-66.450	-172.790	-240.020
--	REFERENCE POINT ON CALIBRATION PIER	-126.746	180.099	132.469
--	WEST MONOLITH	626.028	-411.990	-79.014
--	7853 1987 A	0.980	-1.567	-1.197
--	7853 1987 B	-0.164	-2.799	-3.345
--	7853 1987 C	-2.476	-1.416	3.182
--	7853 1987 D	-2.041	-0.200	-1.506
--	BP ARIES 1 (DOP. 51105)	777.175	-568.384	-166.228
7084	GSFC MOBILE LASER NO. 7084	-169.107	55.235	-41.459
7114	MOBLAS 7114 1979	-1.223	-2.261	-3.617
7207	40 METER ANTENNA REFERENCE POINT	820.483	-549.137	-87.110

Mon. Number	Monument Inscription	---- Differential Coordinates ---- North	East	Up
--	7853 RM 1	52.806	10.058	-0.206
--	7853 RM 2	-24.420	43.881	-0.805
--	7853 RM 3	-25.912	-43.221	-0.636
--	7853 1987 A	-1.507	1.606	0.005
--	7853 1987 B	-4.201	1.182	0.001
--	7853 1987 C	-3.998	-1.509	0.002
--	7853 1987 D	-1.890	-1.702	-0.001
7114	MOBLAS 7114 1979	-4.435	-0.005	-0.142

-- SITE SKETCH --

Site Number: 11
Current Site Name: OWENS VALLEY
Location: OWENS VALLEY RADIO OBS., BIG PINE, CA

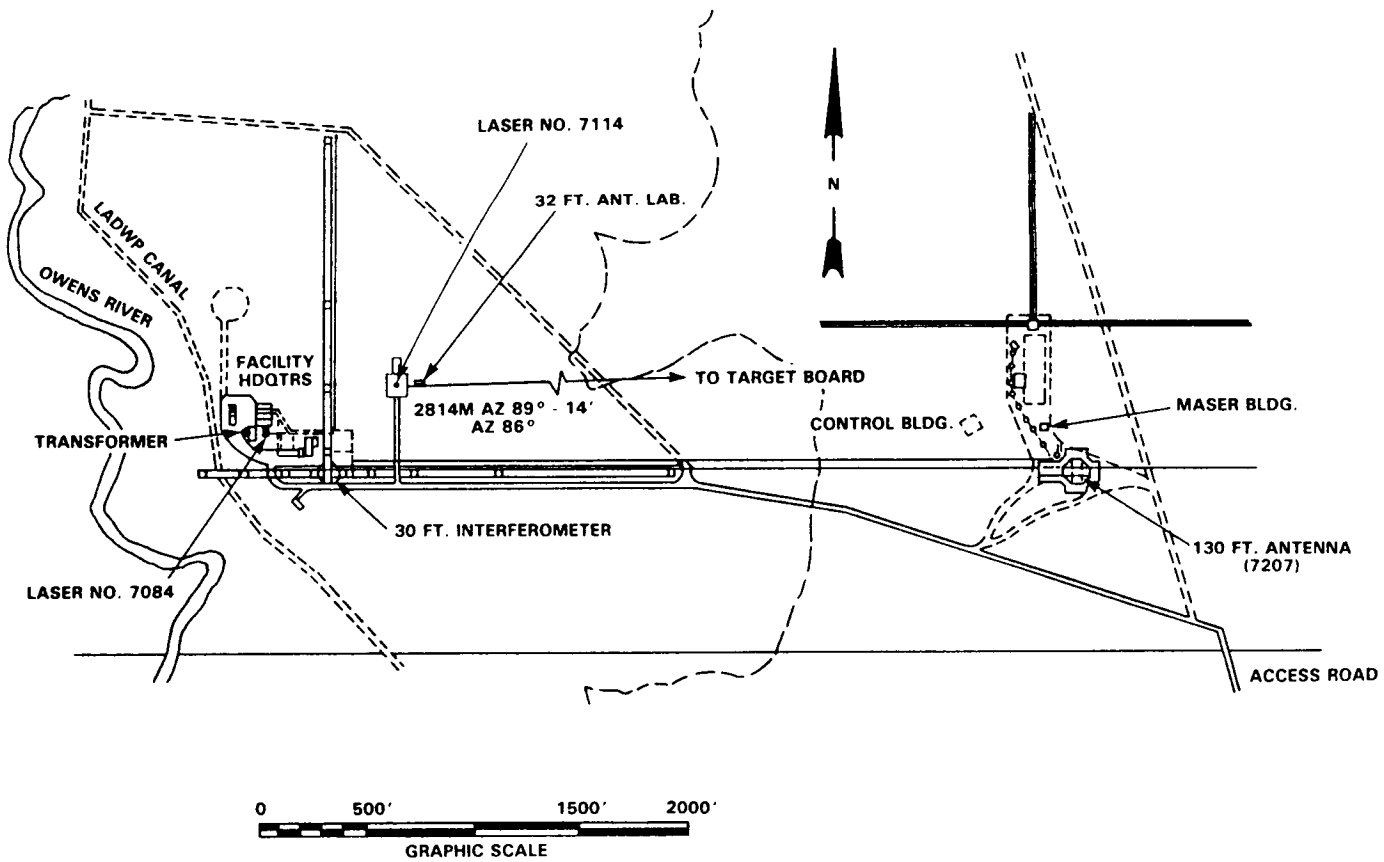


Figure 4-OVRO. OWENS VALLEY Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 11
 Current Site Name: OWENS VALLEY
 Location: OWENS VALLEY RADIO OBS., BIG PINE, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7084	MOBLAS-2	70840201	12-DEC-77	31-MAR-78	YES
7114	MOBLAS-2	71140201	08-JUN-79	31-JAN-81	YES
7114	TLRS-1	71141102	11-AUG-81	29-SEP-81	YES
7114	TLRS-1	71141103	08-NOV-82	21-JAN-83	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7207	OVRO 130	72077001	09-SEP-76	09-SEP-76	YES
7207	OVRO 130	72077001	29-SEP-76	29-SEP-76	YES
7207	OVRO 130	72077001	04-OCT-76	04-OCT-76	YES
7207	OVRO 130	72077001	09-OCT-76	09-OCT-76	YES
7207	OVRO 130	72077001	11-OCT-76	11-OCT-76	YES
7207	OVRO 130	72077001	14-OCT-76	14-OCT-76	YES
7207	OVRO 130	72077001	13-DEC-76	13-DEC-76	YES
7207	OVRO 130	72077001	15-DEC-76	15-DEC-76	YES
7207	OVRO 130	72077001	27-MAR-77	27-MAR-77	YES
7207	OVRO 130	72077001	26-JUN-77	26-JUN-77	YES
7207	OVRO 130	72077001	24-SEP-77	24-SEP-77	YES
7207	OVRO 130	72077001	13-JAN-78	13-JAN-78	YES
7207	OVRO 130	72077001	24-FEB-78	24-FEB-78	YES
7207	OVRO 130	72077001	17-MAY-78	17-MAY-78	YES
7207	OVRO 130	72077001	03-AUG-79	03-AUG-79	YES
7207	OVRO 130	72077001	25-NOV-79	25-NOV-79	YES
7207	OVRO 130	72077001	07-JAN-80	07-JAN-80	YES
7207	OVRO 130	72077001	11-APR-80	11-APR-80	YES
7207	OVRO 130	72077001	12-JUN-80	12-JUN-80	YES
7207	OVRO 130	72077001	26-JUL-80	26-JUL-80	YES
7207	OVRO 130	72077001	27-JUL-80	27-JUL-80	YES
7207	OVRO 130	72077001	29-JUL-80	29-JUL-80	YES
7207	OVRO 130	72077001	31-JUL-80	31-JUL-80	YES
7207	OVRO 130	72077001	26-SEP-80	26-SEP-80	YES
7207	OVRO 130	72077001	27-SEP-80	27-SEP-80	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 11
 Current Site Name: OWENS VALLEY
 Location: OWENS VALLEY RADIO OBS., BIG PINE, CA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7207	OVRO 130	72077001	28-SEP-80	28-SEP-80	YES
7207	OVRO 130	72077001	29-SEP-80	29-SEP-80	YES
7207	OVRO 130	72077001	30-SEP-80	30-SEP-80	YES
7207	OVRO 130	72077001	01-OCT-80	01-OCT-80	YES
7207	OVRO 130	72077001	02-OCT-80	02-OCT-80	YES
7207	OVRO 130	72077001	16-OCT-80	16-OCT-80	YES
7207	OVRO 130	72077001	17-OCT-80	17-OCT-80	YES
7207	OVRO 130	72077001	18-OCT-80	18-OCT-80	YES
7207	OVRO 130	72077001	19-OCT-80	19-OCT-80	YES
7207	OVRO 130	72077001	20-OCT-80	20-OCT-80	YES
7207	OVRO 130	72077001	21-OCT-80	21-OCT-80	YES
7207	OVRO 130	72077001	22-OCT-80	22-OCT-80	YES
7207	OVRO 130	72077001	02-NOV-80	02-NOV-80	YES
7207	OVRO 130	72077001	03-NOV-80	03-NOV-80	YES
7207	OVRO 130	72077001	15-FEB-81	15-FEB-81	YES
7207	OVRO 130	72077001	17-FEB-81	17-FEB-81	YES
7207	OVRO 130	72077001	18-FEB-81	18-FEB-81	YES
7207	OVRO 130	72077001	11-MAY-81	11-MAY-81	YES
7207	OVRO 130	72077001	13-MAY-81	13-MAY-81	YES
7207	OVRO 130	72077001	14-MAY-81	14-MAY-81	YES
7207	OVRO 130	72077001	16-MAY-81	16-MAY-81	YES
7207	OVRO 130	72077001	17-MAY-81	17-MAY-81	YES
7207	OVRO 130	72077001	16-JUN-81	16-JUN-81	YES
7207	OVRO 130	72077001	17-JUN-81	17-JUN-81	YES
7207	OVRO 130	72077001	18-NOV-81	18-NOV-81	YES
7207	OVRO 130	72077001	19-NOV-81	19-NOV-81	YES
7207	OVRO 130	72077001	16-JUN-82	16-JUN-82	YES
7207	OVRO 130	72077001	17-JUN-82	17-JUN-82	YES
7207	OVRO 130	72077001	18-JUN-82	18-JUN-82	YES
7207	OVRO 130	72077001	19-JUN-82	19-JUN-82	YES
7207	OVRO 130	72077001	20-JUN-82	20-JUN-82	YES
7207	OVRO 130	72077001	21-JUN-82	21-JUN-82	YES
7207	OVRO 130	72077001	24-AUG-81	24-AUG-81	YES
7207	OVRO 130	72077001	26-AUG-81	26-AUG-81	YES
7207	OVRO 130	72077001	28-AUG-81	28-AUG-81	YES
7207	OVRO 130	72077001	30-AUG-81	30-AUG-81	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 11
 Current Site Name: OWENS VALLEY
 Location: OWENS VALLEY RADIO OBS., BIG PINE, CA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7207	OVRO 130	72077001	31-AUG-81	31-AUG-81	YES
7207	OVRO 130	72077001	02-SEP-81	02-SEP-81	YES
7207	OVRO 130	72077001	12-DEC-81	12-DEC-81	YES
7207	OVRO 130	72077001	14-DEC-81	14-DEC-81	YES
7207	OVRO 130	72077001	18-DEC-81	18-DEC-81	YES
7207	OVRO 130	72077001	16-OCT-82	16-OCT-82	YES
7207	OVRO 130	72077001	17-OCT-82	17-OCT-82	YES
7207	OVRO 130	72077001	18-OCT-82	18-OCT-82	YES
7207	OVRO 130	72077001	21-OCT-82	21-OCT-82	YES
7207	OVRO 130	72077001	22-OCT-82	22-OCT-82	YES
7207	OVRO 130	72077001	24-OCT-82	24-OCT-82	YES
7207	OVRO 130	72077001	25-OCT-82	25-OCT-82	YES
7207	OVRO 130	72077001	15-DEC-82	15-DEC-82	YES
7207	OVRO 130	72077001	16-DEC-82	16-DEC-82	YES
7207	OVRO 130	72077001	22-FEB-83	22-FEB-83	YES
7207	OVRO 130	72077001	24-FEB-83	24-FEB-83	YES
7207	OVRO 130	72077001	06-JUN-83	06-JUN-83	YES
7207	OVRO 130	72077001	07-JUN-83	07-JUN-83	YES
7207	OVRO 130	72077001	08-JUN-83	08-JUN-83	YES
7207	OVRO 130	72077001	27-JUN-83	27-JUN-83	YES
7207	OVRO 130	72077001	29-JUN-83	29-JUN-83	YES
7207	OVRO 130	72077001	22-AUG-83	22-AUG-83	YES
7207	OVRO 130	72077001	23-AUG-83	23-AUG-83	YES
7207	OVRO 130	72077001	25-AUG-83	25-AUG-83	YES
7207	OVRO 130	72077001	26-AUG-83	26-AUG-83	YES
7207	OVRO 130	72077001	27-AUG-83	27-AUG-83	YES
7207	OVRO 130	72077001	28-AUG-83	28-AUG-83	YES
7207	OVRO 130	72077001	31-AUG-83	31-AUG-83	YES
7207	OVRO 130	72077001	31-OCT-83	31-OCT-83	YES
7207	OVRO 130	72077001	05-NOV-83	05-NOV-83	YES
7207	OVRO 130	72077001	12-NOV-83	12-NOV-83	YES
7207	OVRO 130	72077001	20-FEB-84	20-FEB-84	YES
7207	OVRO 130	72077001	21-FEB-84	22-FEB-84	YES
7207	OVRO 130	72077001	23-FEB-84	23-FEB-84	YES
7207	OVRO 130	72077001	24-FEB-84	25-FEB-84	YES
7207	OVRO 130	72077001	26-FEB-84	27-FEB-84	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 11
 Current Site Name: OWENS VALLEY
 Location: OWENS VALLEY RADIO OBS., BIG PINE, CA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7207	OVRO 130	72077001	09-APR-84	10-APR-84	YES
7207	OVRO 130	72077001	12-APR-84	12-APR-84	YES
7207	OVRO 130	72077001	19-APR-84	20-APR-84	YES
7207	OVRO 130	72077001	26-APR-84	27-APR-84	YES
7207	OVRO 130	72077001	19-MAY-84	20-MAY-84	YES
7207	OVRO 130	72077001	22-OCT-84	23-OCT-84	YES
7207	OVRO 130	72077001	25-OCT-84	26-OCT-84	YES
7207	OVRO 130	72077001	28-OCT-84	29-OCT-84	YES
7207	OVRO 130	72077001	01-MAR-85	02-MAR-85	YES
7207	OVRO 130	72077001	04-MAR-85	05-MAR-85	YES
7207	OVRO 130	72077001	07-MAR-85	08-MAR-85	YES
7207	OVRO 130	72077001	10-MAR-85	11-MAR-85	YES
7207	OVRO 130	72077001	13-MAR-85	13-MAR-85	YES
7207	OVRO 130	72077001	07-MAY-85	07-MAY-85	YES
7207	OVRO 130	72077001	09-MAY-85	09-MAY-85	YES
7207	OVRO 130	72077001	29-OCT-85	29-OCT-85	YES
7207	OVRO 130	72077001	01-APR-86	01-APR-86	YES
7207	OVRO 130	72077001	04-APR-86	04-APR-86	YES
7207	OVRO 130	72077001	06-APR-86	06-APR-86	YES
7207	OVRO 130	72077001	07-APR-86	07-APR-86	YES
7207	OVRO 130	72077001	10-APR-86	10-APR-86	YES
7207	OVRO 130	72077001	13-APR-86	13-MAY-86	YES
7207	OVRO 130	72077001	14-MAY-86	14-MAY-86	YES
7207	OVRO 130	72077001	18-MAY-86	18-MAY-86	YES
7207	OVRO 130	72077001	21-MAY-86	21-MAY-86	YES
7207	OVRO 130	72077001	16-OCT-86	16-OCT-86	YES
7207	OVRO 130	72077001	18-OCT-86	18-OCT-86	YES
7207	OVRO 130	72077001	19-OCT-86	19-OCT-86	YES
7207	OVRO 130	72077001	22-OCT-86	22-OCT-86	YES
7207	OVRO 130	72077001	26-OCT-86	26-OCT-86	YES
7207	OVRO 130	72077001	27-OCT-86	27-OCT-86	YES
7207	OVRO 130	72077001	29-OCT-86	29-OCT-86	YES
7207	OVRO 130	72077001	31-OCT-86	31-OCT-86	YES
7207	OVRO 130	72077001	01-NOV-86	01-NOV-86	YES
7207	OVRO 130	72077001	04-NOV-86	04-NOV-86	YES
7207	OVRO 130	72077001	07-DEC-86	07-DEC-86	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 11
 Current Site Name: OWENS VALLEY
 Location: OWENS VALLEY RADIO OBS., BIG PINE, CA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7207	OVRO 130	72077001	10-DEC-86	10-DEC-86	YES
7207	OVRO 130	72077001	11-DEC-86	11-DEC-86	YES
7207	OVRO 130	72077001	13-DEC-86	13-DEC-86	YES
7207	OVRO 130	72077001	16-DEC-86	16-DEC-86	YES
7207	OVRO 130	72077001	01-MAY-87	01-MAY-87	NO
7207	OVRO 130	72077001	14-MAY-87	14-MAY-87	NO
7207	OVRO 130	72077001	15-OCT-87	15-OCT-87	NO
7207	OVRO 130	72077001	16-OCT-87	16-OCT-87	NO
7207	OVRO 130	72077001	18-OCT-87	18-OCT-87	NO
7207	OVRO 130	72077001	21-OCT-87	21-OCT-87	NO
7207	OVRO 130	72077001	24-OCT-87	24-OCT-87	NO
7207	OVRO 130	72077001	27-OCT-87	27-OCT-87	NO
7207	OVRO 130	72077001	28-OCT-87	28-OCT-87	NO
7207	OVRO 130	72077001	31-OCT-87	31-OCT-87	NO
7207	OVRO 130	72077001	01-NOV-87	01-NOV-87	NO
7853	MV-3	78535301	01-NOV-87	02-NOV-87	YES

-- SITE INFORMATION --

Site Number: 4

Current Site Name: PALOS VERDES

Other Site Name:

Location: PALOS VERDES, CA

Geographic Region: CALIFORNIA

Tectonic Plate: PACIFIC

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION.

Site Description: THE SITE IS LOCATED ON THE DISMANTLED MISSILE SITE ADJACENT TO THE CITY HALL OF PALOS VERDES. THE SITE IS A NIKE CONCRETE SLAB LOCATED IN THE NORTH CORNER OF THE FENCED AREA. ONE MONUMENT COMPATIBLE FOR OCCUPATION BY THE MOBILE VLBI SYSTEMS IS LOCATED ON THIS SLAB.

Site Topo Map: REDONDO BEACH, CALIFORNIA, N3344-W11822.5/8.5 X 7.5, 1963. STATE OF CALIFORNIA, AVAILABLE THROUGH THE U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: LOS ANGELES BASIN

Local Geology: QUATERNARY NON-MARINE TERRACE DEPOSITS

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 4
 Current Site Name: PALOS VERDES
 Location: PALOS VERDES, CA
 Number of Observing Monuments: 1
 Surveyed into National Network? YES

Monument Number: 7268
 Type of Monument: NGS STATION DISK
 Monument Inscription: PALOS VERDES ARIES 1976 1980
 Systems Using Monument: MOBILE VLBI

Latitude: N 33 44' 37.52114''
 Longitude: W 118 24' 09.69809''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 78.347 meters
 Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/03-SEP-86
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THE OBSERVING MONUMENT WAS ADDED AFTER THE THREE REFERENCE MONUMENTS.

Differential Coordinates FROM Observing Monument 7268 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-05

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	EXPT. 80J REF. PT. 7/80	-1.093	-2.079	1.584
--	EXPT. 81B REF. PT. 2/81	-1.071	-2.175	1.638
--	EXPT. 81O REF. PT. 8/81	-1.009	-2.074	1.575
--	JPL (9M) REF. PT. 10/76	-2.586	-4.861	3.671
--	NEBRASKA 1933	-358.391	237.286	35.340
--	PALOS VERDES ARIES 1 1975	-26.304	47.223	51.066
--	PALOS VERDES ARIES 2 1975	-6.264	-31.384	-44.315
--	PALOS VERDES ARIES 3 1975	-107.747	29.699	-39.161
--	PALOS VERDES ARIES ECC.	0.097	-0.032	0.025

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	EXPT. 80J REF. PT. 7/80	0.013	0.027	2.833
--	EXPT. 81B REF. PT. 2/81	0.016	0.092	2.924
--	EXPT. 81O REF. PT. 8/81	0.030	0.099	2.791
--	JPL (9M) REF. PT. 10/76	-0.006	0.038	6.618
--	PALOS VERDES ARIES 1 1975	58.585	-45.603	4.230
--	PALOS VERDES ARIES 2 1975	-53.839	9.421	0.819
--	PALOS VERDES ARIES ECC.	0.031	0.100	-0.001
--	JPL (9M) REF PT. 2/76	0.000	0.001	6.598

-- SITE SKETCH --

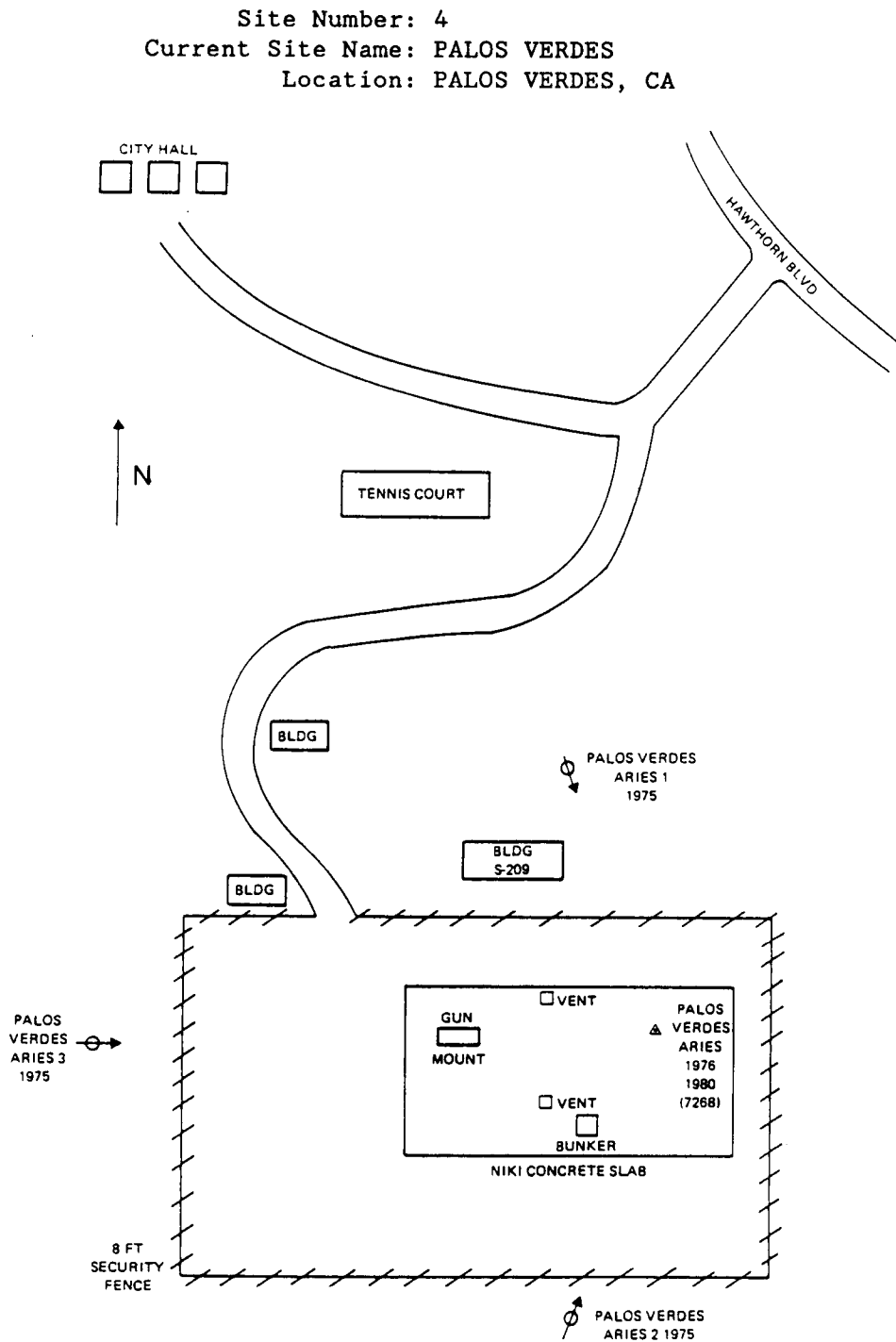


Figure 4-P VRDS. PALOS VERDES Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 4
Current Site Name: PALOS VERDES
Location: PALOS VERDES, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7268	MV-1	72685101	04-MAR-76	05-MAR-76	NO
7268	MV-1	72685102	13-OCT-76	13-OCT-76	NO
7268	MV-2	72685203	30-JUL-80	31-JUL-80	YES
7268	MV-2	72685204	17-FEB-81	17-FEB-81	YES
7268	MV-2	72685205	26-AUG-81	27-AUG-81	YES
7268	MV-2	72685206	12-NOV-83	13-NOV-83	YES
7268	MV-2	72685207	04-MAR-85	06-MAR-85	YES
7268	MV-2	72685208	25-MAR-87	26-MAR-87	NO
7268	MV-2	72685209	07-DEC-87	09-DEC-87	NO

-- SITE INFORMATION --

Site Number: 6

Current Site Name: PASADENA

Other Site Name: JPL

Location: JET PROPULSION LAB, PASADENA, CA

Geographic Region: CALIFORNIA

Tectonic Plate: PACIFIC

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION AND INTERCOMPARISON OF MEASUREMENT TECHNIQUES.

Site Description: THE SITE IS LOCATED ON A MESA AT THE JET PROPULSION LABORATORY. THE SITE HAS BEEN OCCUPIED BY MOBILE VLBI AND ONE LASER RANGING SYSTEM. IN THE PAST, EACH SYSTEM OCCUPIED A UNIQUE MONUMENT. THE SITE IS A KEY SITE FOR EQUIPMENT DEVELOPMENT AND TESTING. VLBI ACTIVITY HAS BEEN TRANSFERRED TO MOJAVE, AND THE SITE IS NOW INSTRUMENTAL IN THE DEVELOPMENT AND TESTING OF THE GLOBAL POSITIONING SYSTEM.

Site Topo Map: PASADENA, CALIFORNIA. N3407.5-W11807.5/7.5, 1966, U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: LOS ANGELES BASIN/TRANSVERSE RANGES

Local Geology: MESOZOIC GRANITIC ROCKS. THE SITE IS ON THE "SLUSHY" EDGE OF THE PACIFIC PLATE.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 6
 Current Site Name: PASADENA
 Location: JET PROPULSION LAB, PASADENA, CA
 Number of Observing Monuments: 4
 Surveyed into National Network? YES

Monument Number: 7263
 Type of Monument: JPL STEEL PLATE APPROXIMATELY 12'' X 12''
 Monument Inscription: NONE -- HOLE IN CENTER
 Systems Using Monument: MOBILE VLBI

Latitude: N 34 12' 18.17872''
 Longitude: W 118 10' 21.00997''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 430.250 meters
 Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/05-SEP-86
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THE 9-METER ANTENNA (MV-1) TYPICALLY OCCUPIES THIS MONUMENT.
 MV-2 AND -3 HAVE OCCUPIED THIS MONUMENT IN THE PAST.

Differential Coordinates FROM Observing Monument 7263 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-05

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	JPL ARIES 1 1975	176.088	-134.553	-21.007
--	JPL ARIES 1 1975 RM 1	183.836	-137.036	-18.800
--	JPL ARIES 3 1975	-152.203	28.867	-36.848
--	LA COUNTY ENG. (MARK)	99.257	-29.705	61.774
--	MTL C12B	90.408	-28.276	57.431
7264	ARIES 5-B-1 8-15-78	-21.464	19.012	10.889
7272	JPL MV3 1983	1.987	-18.063	-22.052
7896	JPL ARIES 2 1975	94.064	-31.945	55.121

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
7264	ARIES 5-B-1 8-15-78	12.729	-27.898	0.642
7272	JPL MV3 1983	-26.661	10.281	-0.002

-- MONUMENT INFORMATION --

(Continued)

Site Number: 6
Current Site Name: PASADENA
Location: JET PROPULSION LAB, PASADENA, CA

Monument Number: 7264
Type of Monument: STEEL PLATE
Monument Inscription: ARIES 5-B-1 8-15-78 (PUNCHMARK)
Systems Using Monument: MOBILE VLBI

Latitude: N 34 12' 18.59185''
Longitude: W 118 10' 22.09960''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 430.892 meters
Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/05-SEP-86
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THE 4-METER ANTENNA (MV-2) TYPICALLY OCCUPIES THIS MONUMENT.

Differential Coordinates FROM Observing Monument 7264 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-05

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	JPL ARIES 1 1975	197.552	-153.565	-31.896
--	JPL ARIES 1 1975 RM 1	205.300	-156.048	-29.689
--	JPL ARIES 3 1975	-130.739	9.856	-47.738
--	LA COUNTY ENG. (MARK)	120.721	-48.717	50.885
--	MTL C12B (MARK)	111.873	-47.287	46.542
7263	----	21.464	-19.012	-10.889
7272	JPL MV3 1983	23.452	-37.074	-32.941
7896	JPL ARIES 2 1975	115.528	-50.957	44.232

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
7263	----	-12.729	27.898	-0.642
7272	JPL MV3 1983	-39.390	38.179	-0.644

-- MONUMENT INFORMATION --

(Continued)

Site Number: 6
Current Site Name: PASADENA
Location: JET PROPULSION LAB, PASADENA, CA

Monument Number: 7272
Type of Monument: JPL DISK
Monument Inscription: JPL MV3 1983
Systems Using Monument: MOBILE VLBI

Latitude: N 34 12' 17.31349''
Longitude: W 118 10' 20.60846''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 430.246 meters
Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/03-SEP-86
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: MV-3 PREVIOUSLY OCCUPIED MONUMENT; MODIFICATION OF MV-3 MADE
MONUMENT UN-OCCUPIABLE BY MV-3.

Differential Coordinates FROM Observing Monument 7272 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-05

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	JPL ARIES 1 1975	174.100	-116.490	1.045
--	JPL ARIES 1 1975 RM 1	181.848	-118.974	3.252
--	JPL ARIES 3 1975	-154.191	46.930	-14.797
--	LA COUNTY ENG. (MARK)	97.269	-11.643	83.826
--	MTL C12B (MARK)	88.421	-10.213	79.483
7263	----	-1.987	18.063	22.052
7264	ARIES 5-B-1 8-15-78	-23.452	37.074	32.941
7896	JPL ARIES 2 1975	92.076	-13.882	77.173

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
7263	----	26.661	-10.281	0.002
7264	ARIES 5-B-1 8-15-78	39.390	-38.179	0.644

-- MONUMENT INFORMATION --

(Continued)

Site Number: 6
Current Site Name: PASADENA
Location: JET PROPULSION LAB, PASADENA, CA

Monument Number: 7896
Type of Monument: NGS STATION DISK
Monument Inscription: JPL ARIES 2 1975
Systems Using Monument: TLRS

Latitude: N 34 12' 19.95456''
Longitude: W 118 10' 17.18220''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 447.799 meters
Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/05-SEP-86
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS MONUMENT IS LOCATED ON THE MESA IN THE VICINITY OF JPL.

Differential Coordinates FROM Observing Monument 7896 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-05

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	JPL ARIES 1 1975	82.024	-102.608	-76.128
--	JPL ARIES 1 1975 RM 1	89.772	-105.092	-73.921
--	JPL ARIES 3 1975	-246.267	60.812	-91.969
--	LA COUNTY ENG. (MARK)	5.193	2.239	6.654
--	MTL C128B (MARK)	-3.655	3.669	2.310
7263	----	-94.064	31.945	-55.121
7264	ARIES 5-B-1 8-15-78	-115.528	50.957	-44.232
7272	JPL MV3 1983	-92.076	13.882	-77.173

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	LA COUNTY ENG. (MARK)	7.991	3.521	0.079
--	MTL C128B (MARK)	2.759	-4.955	0.051

-- SITE SKETCH --

Site Number: 6
Current Site Name: PASADENA
Location: JET PROPULSION LAB, PASADENA, CA

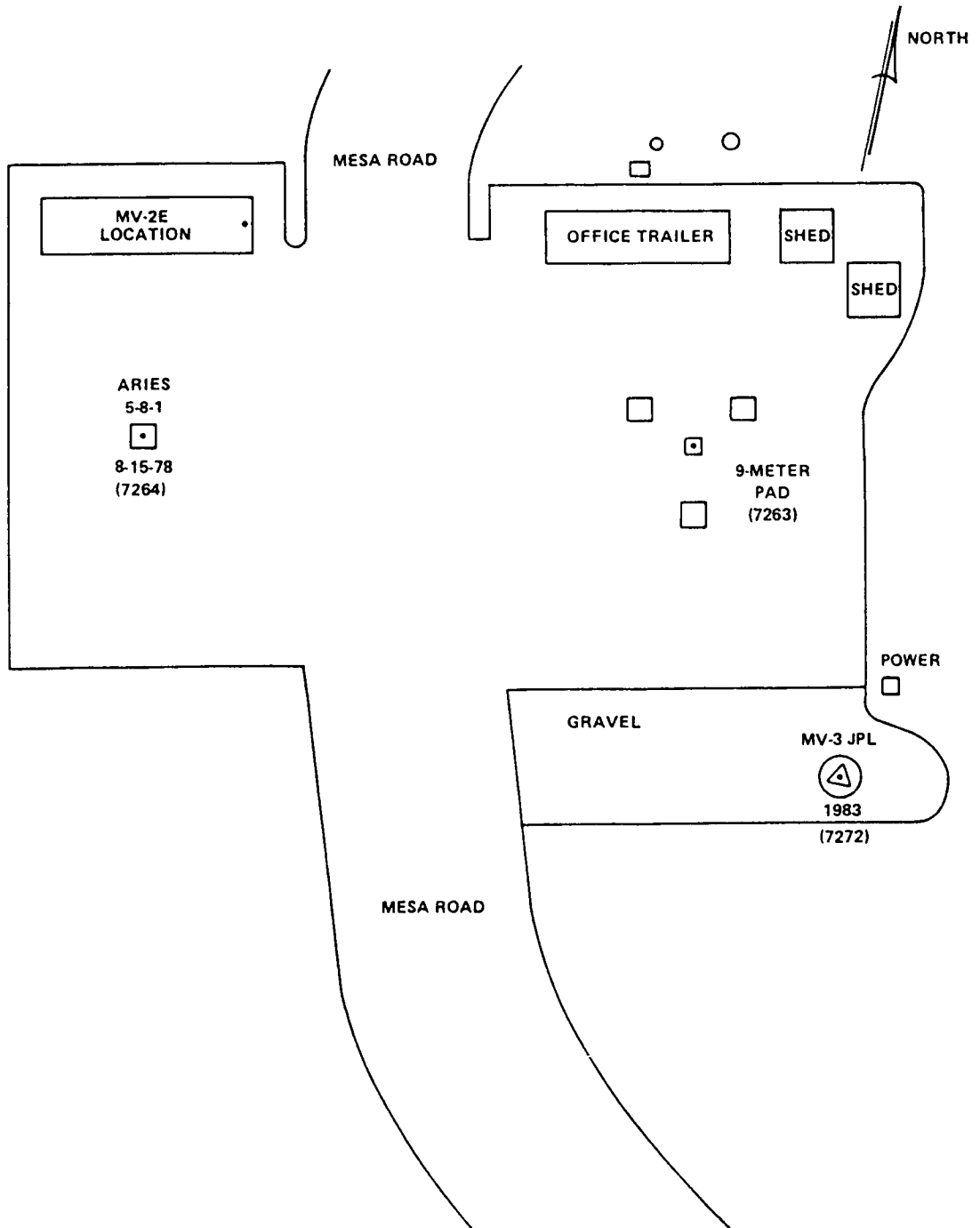


Figure 4-JPL. PASADENA Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 6
 Current Site Name: PASADENA
 Location: JET PROPULSION LAB, PASADENA, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7896	TLRS-1	78961101	24-OCT-80	06-JAN-81	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7263	MV-1	72635101	25-AUG-74	03-AUG-75	NO
7263	MV-1	72635102	15-JAN-76	27-JAN-76	NO
7263	MV-1	72635103	19-AUG-76	21-AUG-76	NO
7263	MV-1	72635104	19-AUG-77	18-OCT-77	NO
7263	MV-1	72635105	08-MAY-78	05-FEB-80	NO
7263	MV-1	72635106	10-JUN-80	12-JUN-80	YES
7263	MV-1	72635107	10-DEC-81	12-DEC-81	YES
7263	MV-1	72635107	14-DEC-81	15-DEC-81	YES
7263	MV-1	72635107	18-DEC-81	19-OCT-82	YES
7263	MV-1	72635107	17-OCT-82	21-OCT-82	YES
7263	MV-1	72635107	22-OCT-82	24-OCT-82	YES
7263	MV-1	72635107	22-FEB-83	23-FEB-83	YES
7263	MV-1	72635107	24-FEB-83	24-FEB-83	YES
7263	MV-3	72635308	09-APR-84	10-APR-84	YES
7263	MV-2	72635209	22-OCT-84	29-OCT-84	YES
7263	MV-2	72635210	18-JAN-85	19-JAN-85	YES
7263	MV-2	72635211	07-MAR-85	08-MAR-85	YES
7263	MV-2	72635212	27-OCT-85	31-OCT-85	YES
7263	MV-3	72635313	13-APR-86	14-APR-86	YES
7263	MV-2	72635214	22-OCT-86	23-OCT-86	YES
7263	MV-3	72635315	04-NOV-86	05-NOV-86	YES
7263	MV-2	72635216	16-DEC-86	17-DEC-86	YES
7263	MV-3	72635317	27-JAN-87	29-JAN-87	NO
7263	MV-2	72635218	18-OCT-87	19-OCT-87	NO
7263	MV-3	72635319	13-DEC-87	15-DEC-87	NO
7264	MV-2	72645201	16-JAN-79	16-JAN-79	NO
7264	MV-2	72645202	05-JAN-80	09-JAN-80	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 6
Current Site Name: PASADENA
Location: JET PROPULSION LAB, PASADENA, CA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7264	MV-2	72645203	28-JUL-80	29-JUL-80	YES
7264	MV-2	72645204	01-NOV-80	02-NOV-80	YES
7264	MV-2	72645204	03-NOV-80	03-NOV-80	YES
7264	MV-2	72645205	14-FEB-81	15-FEB-81	YES
7264	MV-2	72645206	11-MAY-81	12-MAY-81	YES
7264	MV-2	72645207	24-AUG-81	25-AUG-81	YES
7264	MV-2	72645208	22-AUG-83	23-AUG-83	YES
7264	MV-2	72645209	29-OCT-83	01-NOV-83	YES
7264	MV-2	72645210	20-FEB-84	21-FEB-84	YES
7264	MV-2	72645211	22-OCT-84	23-OCT-84	NO
7264	MV-2	72645211	25-OCT-84	26-OCT-84	NO
7264	MV-2	72645211	28-OCT-84	29-OCT-84	NO
7272	MV-3	72725301	29-JUN-83	30-JUN-83	YES

-- SITE INFORMATION --

Site Number: 7

Current Site Name: PEARBLOSSOM

Other Site Name:

Location: PEARBLOSSOM, CA

Geographic Region: CALIFORNIA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION AND INTERCOMPARISON OF MEASUREMENT TECHNIQUES.

Site Description: THE SITE IS LOCATED AT THE PEARBLOSSOM AQUEDUCT PUMPING STATION OF THE CALIFORNIA DEPARTMENT OF WATER RESOURCES, ABOUT ONE MILE NORTHWEST OF THE TOWN OF PEARBLOSSOM. THE SITE IS IN THE NORTHEAST CORNER OF A FENCED MACADAM-SURFACED PARKING LOT. THE SITE IS EQUIPPED WITH AN OBSERVING MONUMENT SURROUNDED BY A THREE-PEDESTAL PAD FOR OCCUPATION BY ANY MOBILE VLBI SYSTEM.

Site Topo Map: LITTLE ROCK, CALIFORNIA. N3430-W11752.5/7.5, 1957, U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: MOJAVE DESERT

Local Geology: QUATERNARY ALLUVIUM. STRAIN AT THIS SITE IS COMPLEX BECAUSE ITS PROXIMITY TO THE SAN ANDREAS FAULT ZONE.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 7
 Current Site Name: PEARBLOSSOM
 Location: PEARBLOSSOM, CA
 Number of Observing Monuments: 1
 Surveyed into National Network? YES

Monument Number: 7253
 Type of Monument: NAIL IN CONCRETE
 Monument Inscription: NONE
 Systems Using Monument: MOBILE VLBI

Latitude: N 34 30' 43.67359''
 Longitude: W 117 55' 17.32628''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 896.648 meters
 Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT 86-09-03/03-SEP-86
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS NAIL WAS REPLACED BY THE NGS MONUMENT 7254.

Differential Coordinates FROM Observing Monument 7253 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-03

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	BM A 1303	-3.291	4.300	3.246
--	PB ARIES 1 1976 (DOP. 51218)	23.708	15.726	36.551
--	PB ARIES 2 1976	3.944	-21.788	-25.137
--	PB ARIES 3 1976	-31.293	15.908	-3.331

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	BM A 1303	3.955	-4.922	-0.022
--	PB ARIES 1 1976 (DOP 51218)	44.282	13.583	0.113
--	PB ARIES 2 1976	-30.574	13.688	0.098
--	PB ARIES 3 1976	-3.083	-35.099	-1.394

-- MONUMENT INFORMATION --

(Continued)

Site Number: 7
Current Site Name: PEARBLOSSOM
Location: PEARBLOSSOM, CA

Monument Number: 7254
Type of Monument: NGS STATION DISK
Monument Inscription: PEARBLOSSOM NCMN 1983
Systems Using Monument: MOBILE VLBI

Latitude: N 34 30' 43.67357''
Longitude: W 117 55' 17.32653''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 896.648 meters
Survey Source/Date Reported: NGS/21-SEP-84
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS NGS DISK REPLACES THE NAIL (MONUMENT NUMBER 7253).

Differential Coordinates FROM Observing Monument 7254 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-03

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	BM A 1303	-3.285	4.298	3.247
--	PB ARIES 1 1976 (DOP. 51218)	23.713	15.724	36.552
--	PB ARIES 2 1976	3.950	-21.791	-25.137
--	PB ARIES 3 1976	-31.287	15.905	-3.330
7253	PB ARIES (NAIL HEAD)	0.006	-0.003	0.000

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	BM A 1303	3.955	-4.915	-0.022
--	PB ARIES 1 1976 (DOP. 51218)	44.282	13.590	0.113
--	PB ARIES 2 1976	-30.574	13.695	0.098
--	PB ARIES 3 1976	-3.083	-35.093	-1.395
7253	PB ARIES (NAIL HEAD)	0.000	0.006	0.000

-- SITE SKETCH --

Site Number: 7
Current Site Name: PEARBLOSSOM
Location: PEARBLOSSOM, CA

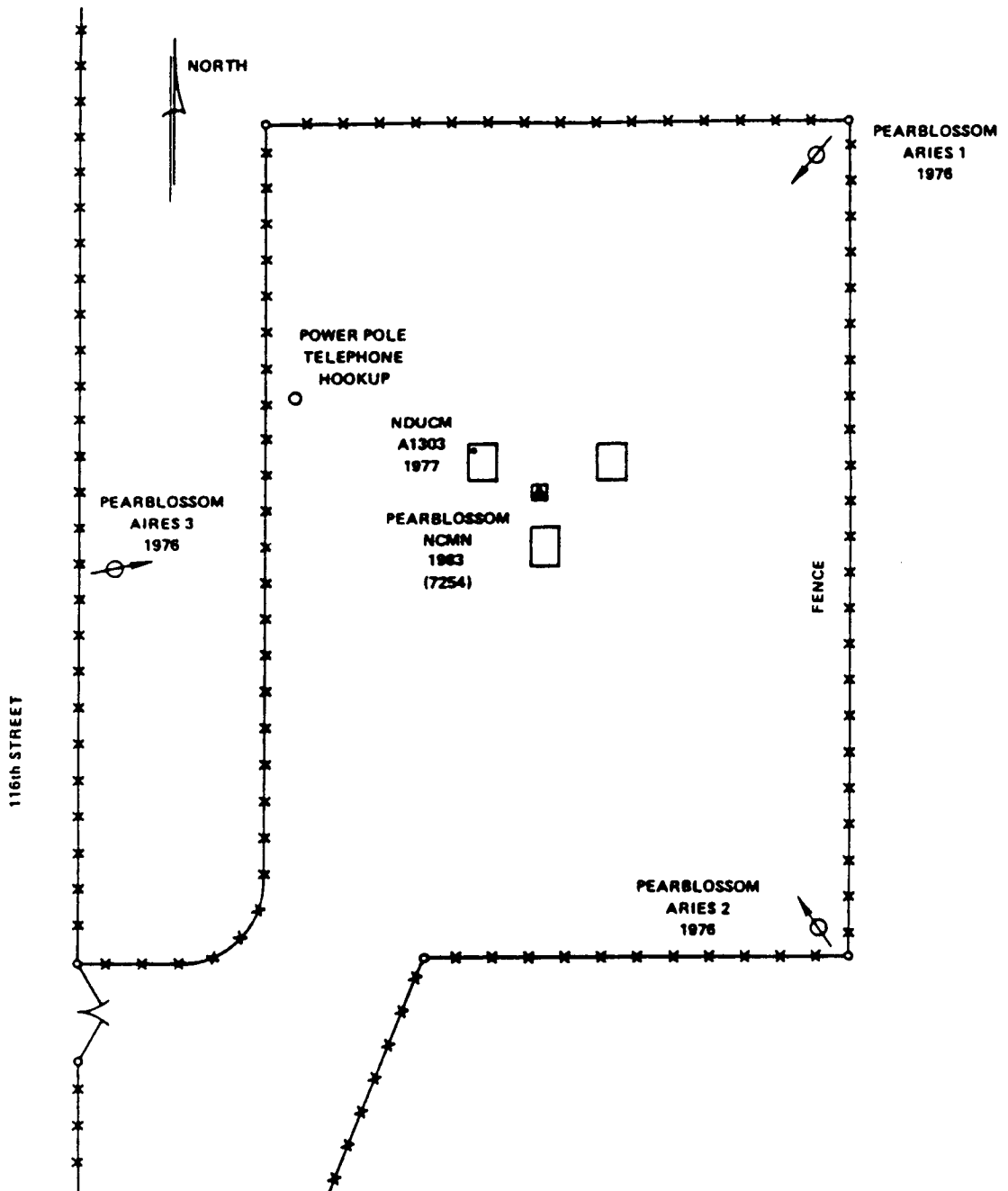


Figure 4-PRBLSM. PEARBLOSSOM Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 7
Current Site Name: PEARBLOSSOM
Location: PEARBLOSSOM, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
--------------------	---------------------	--------------------------	------------------	----------------	-----------------

-- No Previous Occupations --

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7253	MV-1	72535101	06-JUN-76	07-JUN-76	NO
7253	MV-1	72535102	14-NOV-77	16-NOV-77	NO
7253	MV-2	72535203	18-FEB-81	19-FEB-81	YES
7253	MV-2	72535204	27-AUG-81	29-AUG-81	YES
7253	MV-3	72535305	21-FEB-83	21-FEB-83	YES
7254	MV-3	72545301	22-AUG-83	23-AUG-83	YES
7254	MV-3	72545302	29-OCT-83	30-OCT-83	NO
7254	MV-3	72545303	20-FEB-84	21-FEB-84	YES
7254	MV-3	72545304	25-OCT-84	26-OCT-84	YES
7254	MV-3	72545305	07-MAR-85	08-MAR-85	YES
7254	MV-3	72545306	27-OCT-85	28-OCT-85	YES
7254	MV-2	72545207	27-JAN-87	29-JAN-87	NO
7254	MV-2	72545208	15-OCT-87	16-OCT-87	NO
7254	MV-2	72545209	13-DEC-87	15-DEC-87	NO

-- SITE INFORMATION --

Site Number: 69

Current Site Name: PENTICTON

Other Site Name:

Location: PENTICTON, BRITISH COLUMBIA, CANADA

Geographic Region: NORTH AMERICA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF INTERNAL PLATE DEFORMATION/PLATE STABILITY.

Site Description: THE SITE IS A PERMANENT RADIO OBSERVATORY COMPLEX OPERATED BY THE HERZBERG INSTITUTE OF ASTROPHYSICS, NATIONAL RESEARCH COUNCIL OF CANADA. THE FACILITIES INCLUDE A 26-METER ANTENNA, A FIXED ANTENNA ARRAY, AND A SYNTHESIS INTERFEROMETER EMPLOYING TWO MOVEABLE AND TWO FIXED 8.5-METER ANTENNAS. THE SITE IS EQUIPPED WITH AN OBSERVING MONUMENT THAT CAN ACCOMMODATE ANY MOBILE VLBI SYSTEM.

Site Topo Map: PENTICTON 82E/5, EDITION 2, 1978, 1:50,000 TOPOGRAPHIC MAP SERIES. AVAILABLE FROM CANADA MAP OFFICE, DEPARTMENT OF ENERGY, MINES AND RESOURCES, OTTAWA.

-- GEOLOGICAL INFORMATION --

Geological Province: COLUMBIA INTERMONTANE BELT

Local Geology: THE SITE IS ON GLACIAL AND RECENT SEDIMENTARY DEPOSITS THAT LIE ON A THICK SEQUENCE OF EARLY TERTIARY ROCKS OF DISCONTINUOUS BEDS OF BRECCIA, CONGLOMERATE, ANDESITE AND RHYODASITE LAVA, AND VOLCANIC SANDSTONE overlain by lake and stream fan conglomerates.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 69
 Current Site Name: PENTICTON
 Location: PENTICTON, BRITISH COLUMBIA, CANADA
 Number of Observing Monuments: 1
 Surveyed into National Network? YES

Monument Number: 7283
 Type of Monument: BRONZE TABLET IN TOP OF A TRUNCATED
 CONCRETE PYRAMID
 Monument Inscription: LBI 837030
 Systems Using Monument: MOBILE VLBI

Latitude: N 49 19' 21.22892''
 Longitude: W 119 37' 11.60732''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 528.718 meters
 Survey Source/Date Reported: GEODETIC SURVEY OF CANADA/01-JAN-84
 Datum/Ellipsoid: GEODETIC REFERENCE SYSTEM 1980/GEM 10B
 Comments: A=6378137 METERS, B=6356752.3141 METERS IS GODDARD EARTH MODEL
 10B.

Differential Coordinates FROM Observing Monument 7283 TO
 Reference Monuments and Other Observing Monuments

Data Source: GEODETIC SURVEY OF CANADA

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	KNOLL 827003	92.922	-431.380	-279.111
--	MINE 827002	92.190	31.747	76.119
--	PASTURE 827004	-479.061	110.210	-120.160

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 69
Current Site Name: PENTICTON
Location: PENTICTON, BRITISH COLUMBIA, CANADA

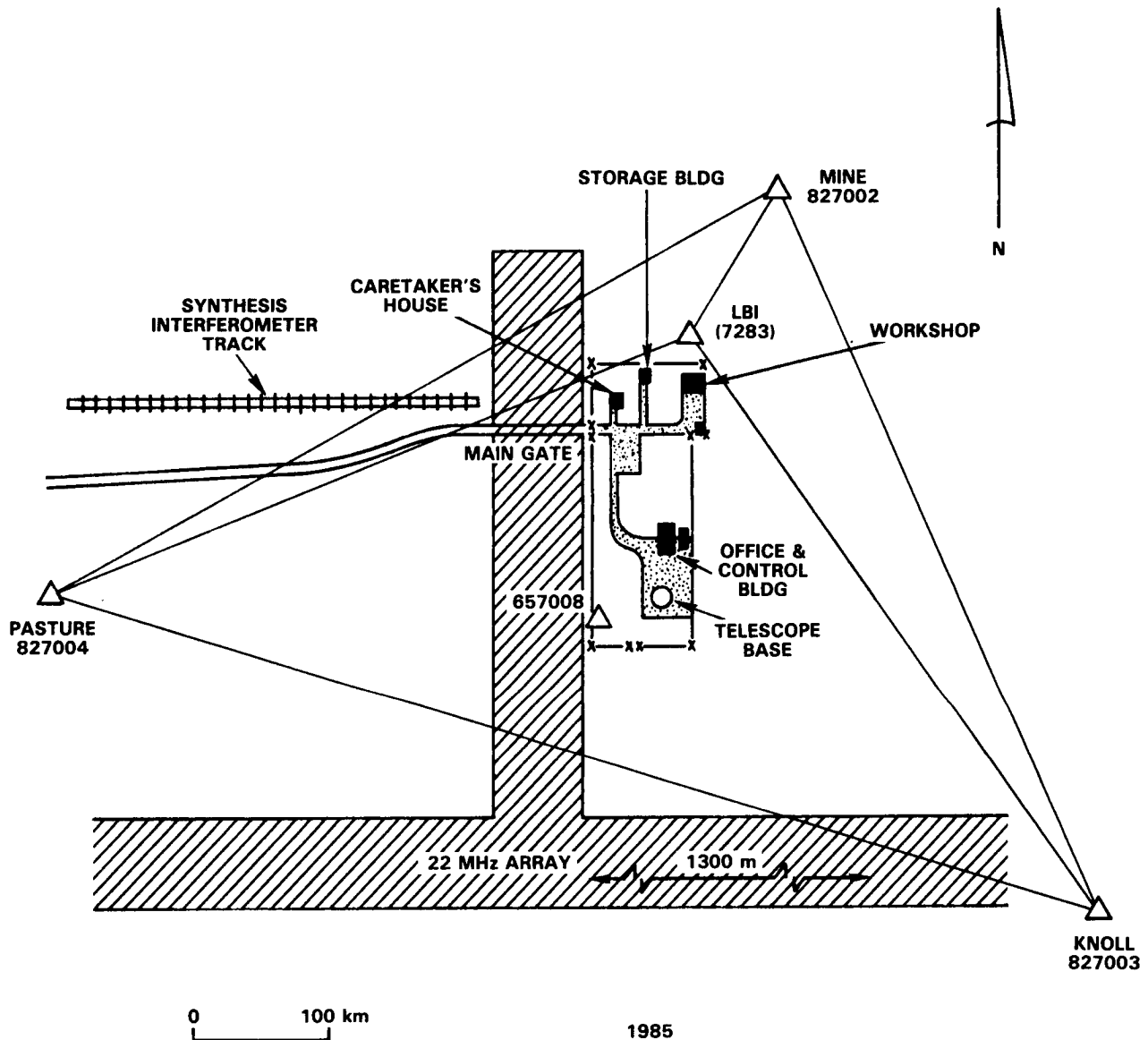


Figure 4-PNTCN. PENTICTON Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 69
Current Site Name: PENTICTON
Location: PENTICTON, BRITISH COLUMBIA, CANADA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----

-- No Previous Occupations --

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7283	MV-2	72835201	11-AUG-84	18-AUG-84	YES
7283	MV-2	72835202	28-AUG-85	29-AUG-85	YES

-- SITE INFORMATION --

Site Number: 204

Current Site Name: PINYON FLAT

Other Site Name:

Location: PINYON FLAT, CA

Geographic Region: CALIFORNIA

Tectonic Plate: PACIFIC

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION.

Site Description: THE SITE IS LOCATED IN SOUTH CENTRAL CALIFORNIA ABOUT TEN MILES SOUTH OF PALM DESERT, OFF HIGHWAY 74 ON THE PINYON FLAT GEOPHYSICAL OBSERVATORY OPERATED BY THE UNIVERSITY OF CALIFORNIA AT SAN DIEGO. THE SITE IS EQUIPPED WITH ONE 16-FOOT BY 16 FOOT MONUMENTED PAD WITH THREE ARIES PEDESTALS SURROUNDING THE PAD. THE SITE IS COMPATIBLE FOR OCCUPATION BY ANY MOBILE VLBI SYSTEM.

Site Topo Map: PALM DESERT, CALIFORNIA. N3330-W11615/15, U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: PENINSULA RANGES; SAN JACINTO MOUNTAINS, MIDWAY BETWEEN SAN ANDREAS FAULT AND SAN JACINTO FAULT.

Local Geology: QUATERNARY ALLUVIUM (SANDY). MESOZOIC GRANITIC ROCKS IN THE AREA. SITE IS LOCATED AMID A COMPLEX PATTERN OF FAULTS, SO DETECTED MOTION AT THIS SITE MAY NOT REFLECT TRUE PACIFIC PLATE MOTION.

Comments: OTHER GEOPHYSICAL INSTRUMENTS OPERATED ON SITE INCLUDE: GRAVITY METER, MAGNETOMETER, TILTMETER, AND STRAIN METER.

-- MONUMENT INFORMATION --

Site Number: 204
 Current Site Name: PINYON FLAT
 Location: PINYON FLAT, CA
 Number of Observing Monuments: 1
 Surveyed into National Network? NO

Monument Number: 7256
 Type of Monument: NGS STATION DISK
 Monument Inscription: PINYON FLAT NCMN 1981
 Systems Using Monument: MOBILE VLBI

Latitude: N 33 36' 33.18476''
 Longitude: W 116 27' 28.54386''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 1244.561 meters
 Survey Source/Date Reported: NGS/21-SEP-84
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7256 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-03

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	51261 PINYON FLAT DMA HTC	-13.780	21.859	21.904
--	51261 PINYON FLAT DMA HTC 1	-1.605	16.713	23.533
--	51261 PINYON FLAT DMA HTC 2	-20.289	27.228	24.701
--	PINYON FLAT AZ. MK.	-58.335	-679.962	-943.517
--	PINYON FLAT NCMN NO 1 1981	31.728	8.553	37.749
--	PINYON FLAT NCMN NO 2 1981	28.734	-32.356	-25.103
--	PINYON FLAT NCMN NO 3 1981	-29.143	11.361	-5.844

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	51261 PINYON FLAT DMA HTC	25.676	-22.075	0.939
--	51261 PINYON FLAT DMA HTC 1	27.486	-8.883	1.161
--	51261 PINYON FLAT DMA HTC 2	29.061	-30.295	0.900
--	PINYON FLAT NCMN NO 1 1981	43.501	24.595	2.747
--	PINYON FLAT NCMN NO 2 1981	-29.854	40.140	-0.433
--	PINYON FLAT NCMN NO 3 1981	-6.424	-31.152	-0.892

-- SITE SKETCH --

Site Number: 204
Current Site Name: PINYON FLAT
Location: PINYON FLAT, CA

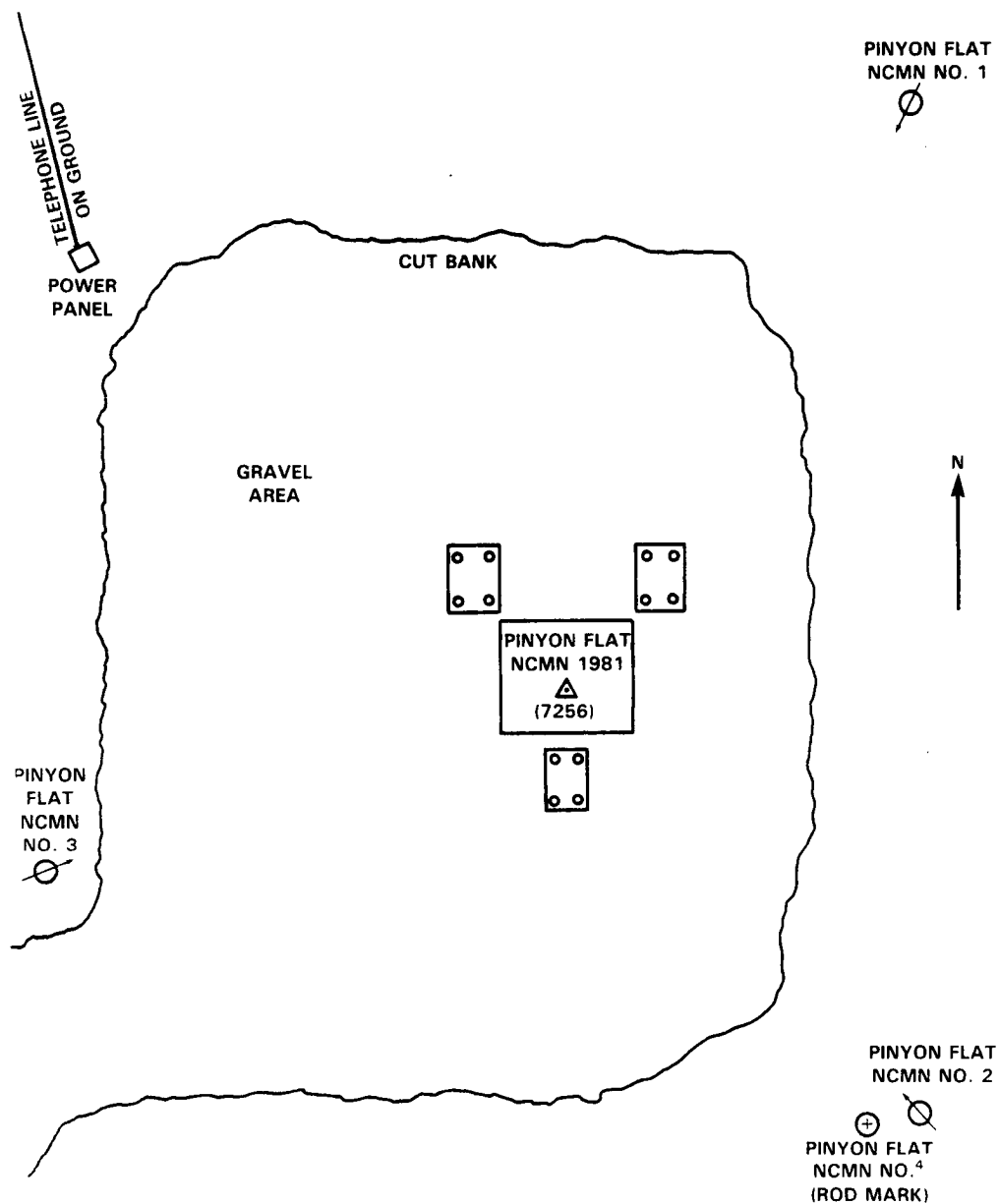


Figure 4-PINYON. PINYON FLAT Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 204
 Current Site Name: PINYON FLAT
 Location: PINYON FLAT, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7256	MV-2	72565201	17-MAY-81	19-MAY-81	YES
7256	MV-3	72565302	22-FEB-83	22-FEB-83	YES
7256	MV-3	72565303	31-OCT-83	04-NOV-83	YES
7256	MV-3	72565304	28-OCT-84	01-NOV-84	YES
7256	MV-3	72565305	18-JAN-85	19-JAN-85	YES
7256	MV-3	72565306	30-OCT-85	03-NOV-85	YES
7256	MV-2	72565207	26-FEB-86	27-FEB-86	YES
7256	MV-2	72565208	10-APR-86	14-APR-86	YES
7256	MV-2	72565209	01-NOV-86	05-NOV-86	YES
7256	MV-3	72565310	13-DEC-86	17-DEC-86	YES
7256	MV-3	72565311	30-JAN-87	01-FEB-87	NO
7256	MV-3	72565312	25-MAR-87	26-MAR-87	NO
7256	MV-3	72566313	07-DEC-87	09-DEC-87	NO

-- SITE INFORMATION --

Site Number: 24

Current Site Name: PLATTEVILLE
Other Site Name: BOULDER
Location: PLATTEVILLE, CO
Geographic Region: NORTH AMERICA
Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, PLATE STABILITY, POLAR MOTION/EARTH ROTATION, REGIONAL DEFORMATION, AND INTERCOMPARISON OF MEASUREMENTS TECHNIQUES.

Site Description: THE SITE IS LOCATED ON AN IONOSPHERE HEATING FIELD STATION UNDER THE NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION, 32 MILES NORTH-NORTHEAST OF DENVER. THE SITE IS EQUIPPED WITH TWO OBSERVING MONUMENTS. ONE MONUMENT IS ON A 34-FOOT BY 34-FOOT MOBLAS PAD OCCUPIED BY MOBLAS-2 FROM 1981 UNTIL LATE 1984. THE OTHER MONUMENT IS THE MIDPOINT OF THE ARIES THREE-PEDESTAL PAD CONSTRUCTED FOR MOBILE VLBI OCCUPATION.

Site Topo Map: MILTON RESERVOIR, COLORADO, N4007.5-W10437/7.5, 1950, U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: GREAT PLAINS

Local Geology: EOLIAN DEPOSITS, INCLUDES DUNES SAND, SAND AND PEORIA LOESS.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 24
Current Site Name: PLATTEVILLE
Location: PLATTEVILLE, CO
Number of Observing Monuments: 2
Surveyed into National Network? YES

Monument Number: 7112
Type of Monument: STANDARD NASA DISK
Monument Inscription: MOBLAS 7112 1980
Systems Using Monument: MOBLAS

Latitude: N 40 10' 58.043''
Longitude: W 104 43' 31.604''
Elevation Above MSL (Geoid): 1519.913 meters
Height Above Ellipsoid: 1526.9 meters
Survey Source/Date Reported: NASA-GSFC-BFEC, CODE 853/01-DEC-80
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7112 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 24
Current Site Name: PLATTEVILLE
Location: PLATTEVILLE, CO

Monument Number: 7258
Type of Monument: NGS STATION DISK
Monument Inscription: PLATTEVILLE NCMN 1981
Systems Using Monument: MOBILE VLBI

Latitude: N 40 10' 58.092''
Longitude: W 104 43' 32.923''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 1519.696 meters
Survey Source/Date Reported: BENDIX PRELIMINARY POSITION/01-OCT-83
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7258 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 24
Current Site Name: PLATTEVILLE
Location: PLATTEVILLE, CO

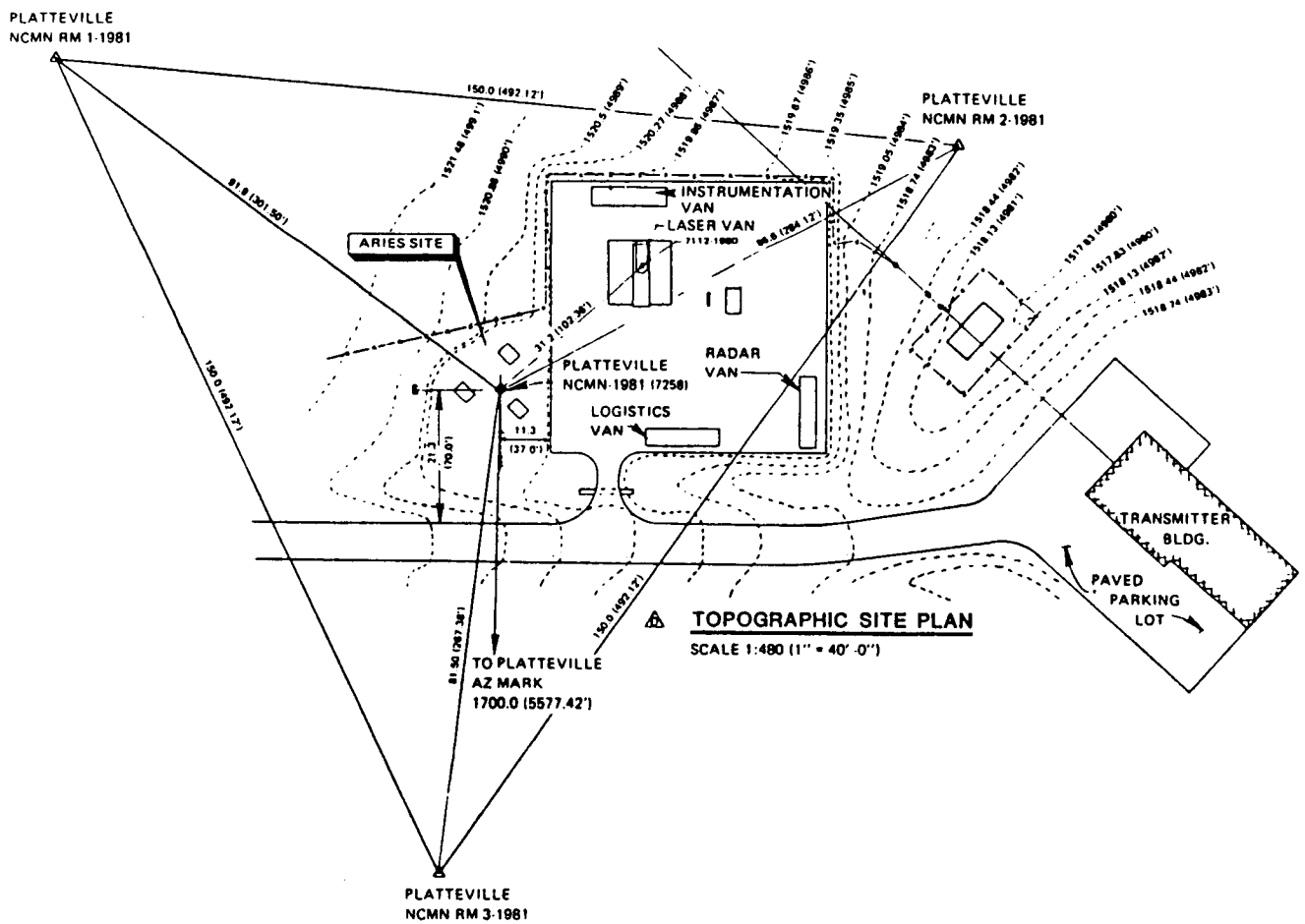


Figure 4-PLATVL. PLATTEVILLE Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 24
 Current Site Name: PLATTEVILLE
 Location: PLATTEVILLE, CO

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7112	MOBLAS-2	71120201	01-APR-81	13-OCT-84	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7258	MV-3	72585301	06-JUN-83	06-JUN-83	YES
7258	MV-3	72585301	07-JUN-83	07-JUN-83	YES
7258	MV-3	72585301	08-JUN-83	08-JUN-83	YES
7258	MV-3	72585301	09-JUN-83	09-JUN-83	YES
7258	MV-3	72585301	10-JUN-83	10-JUN-83	YES
7258	MV-2	72585202	17-APR-84	18-APR-84	YES
7258	MV-2	72585202	21-APR-84	22-APR-84	YES
7258	MV-2	72585202	25-APR-84	26-APR-84	YES
7258	MV-2	72585202	26-APR-84	27-APR-84	YES
7258	MV-2	72585203	02-MAY-85	08-MAY-85	YES
7258	MV-3	72585304	26-MAR-86	03-APR-86	YES
7258	MV-3	72585305	01-MAY-87	03-MAY-87	NO

-- SITE INFORMATION --

Site Number: 212

Current Site Name: POINT REYES

Other Site Name:

Location: POINT REYES, CA

Geographic Region: CALIFORNIA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION.

Site Description: THE SITE IS LOCATED AT THE POINT REYES COAST GUARD COMMUNICATIONS STATION IN THE POINT REYES NATIONAL SEASHORE AREA AND IS SITUATED IN A PARKING LOT ON THE SIDE OF THE COAST GUARD BUILDING. THE STATION IS AN ISOLATED CONCRETE MONUMENT FLUSH WITH THE TOP OF THE PAVED PARKING LOT AND COMPATIBLE FOR OCCUPATION BY MOBILE VLBI SYSTEMS OR TLRS-1.

Site Topo Map: DRAKES BAY, CALIFORNIA. N3800-W12252.5/7.5. 1953, U.S.G.S. RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: NORTHERN CALIFORNIA COASTAL RANGES

Local Geology: MIDDLE OR LOWER PLEISTOCENE MARINE SEDIMENTS. THIS SITE IS SEVERAL KILOMETERS WEST OF SAN ANDREAS FAULT ZONE.

Comments: THIS SITE IS THE FURTHEST NORTHERN PRACTICAL SITE ON THE PACIFIC SIDE OF THE SAN ANDREAS FAULT.

-- MONUMENT INFORMATION --

Site Number: 212
 Current Site Name: POINT REYES
 Location: POINT REYES, CA
 Number of Observing Monuments: 1
 Surveyed into National Network? YES

Monument Number: 7251
 Type of Monument: NGS STATION DISK
 Monument Inscription: POINT REYES NCMN 1981
 Systems Using Monument: MOBILE VLBI

Latitude: N 38 06' 12.93469''
 Longitude: W 122 56' 07.70810''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: -4.389 meters
 Survey Source/Date Reported: NGS/03-JAN-84
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7251 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 84-05-21

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	POINT REYES NCMN AZ. MK.	-980.358	-267.016	-961.889
--	POINT REYES NCMN NO 1 1981	15.282	-24.029	-14.370
--	POINT REYES NCMN NO 2 1981	-44.314	21.225	-9.213
--	POINT REYES NCMN NO 3 1981	12.979	29.043	38.593

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	POINT REYES NCMN NO 1 1981	-18.624	25.892	0.462
--	POINT REYES NCMN NO 2 1981	-11.127	-48.732	-0.741
--	POINT REYES NCMN NO 3 1981	49.765	-4.900	-0.919

-- SITE SKETCH --

Site Number: 212
Current Site Name: POINT REYES
Location: POINT REYES, CA

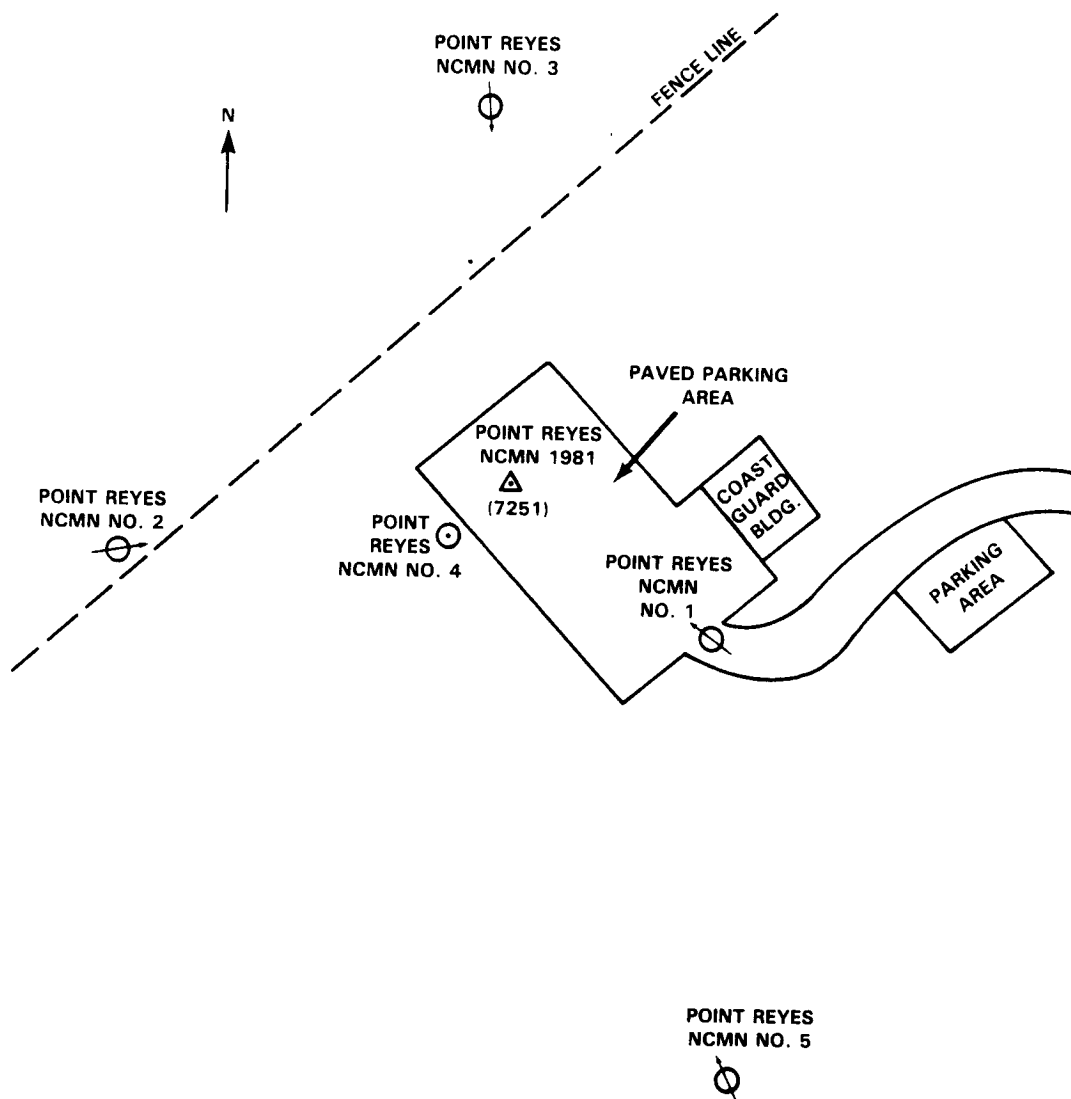


Figure 4-PT REY. POINT REYES Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 212
 Current Site Name: POINT REYES
 Location: POINT REYES, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7251	MV-2	72515201	14-DEC-81	14-DEC-81	YES
7251	MV-3	72515302	27-AUG-83	28-AUG-83	YES
7251	MV-3	72515303	26-FEB-84	27-FEB-84	YES
7251	MV-3	72515304	13-MAR-85	14-MAR-85	YES
7251	MV-2	72515205	19-OCT-85	20-OCT-85	YES
7251	MV-2	72515206	02-FEB-87	04-FEB-87	NO
7251	MV-3	72515307	20-MAY-87	21-MAY-87	NO
7251	MV-3	72515308	24-OCT-87	25-OCT-87	NO

-- SITE INFORMATION --

Site Number: 13

Current Site Name: PRESIDIO

Other Site Name:

Location: SAN FRANCISCO, CA

Geographic Region: CALIFORNIA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION.

Site Description: THE STATION IS LOCATED ON A FORMER TAXIWAY NEAR THE NORTHEAST END OF THE ABANDONED CRISSY FIELD AT THE PRESIDIO IN SAN FRANCISCO. THE SITE IS LOCATED ON A CONCRETE HEADWALL (A FORMER RETAINING WALL FOR A NEARBY WHARF) ON THE SAND DUNES. THE AREA IS PARTIALLY COVERED BY SAND AT TIMES. THE MONUMENT, A BRASS PLUG LEADED INTO A DRILL HOLE IN THE WALL, IS OCCUPIABLE BY MOBILE VLBI SYSTEMS.

Site Topo Map: SAN FRANCISCO NORTH, CALIFORNIA. N3745-W12222.5/7.5, 1956. STATE OF CALIFORNIA, AVAILABLE THRU U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: SOUTHERN COAST RANGES. THE SITE LIES APPROXIMATELY SIX MILES EAST OF THE SAN ANDREAS FAULT.

Local Geology: MESOZOIC ULTRABASE INTRUSIVES ROCKS OF PLEISTOCENE MARINE TERRACE DEPOSITS. THE LOCAL STABILITY OF THE OBSERVING MONUMENT MAY BE IN QUESTION.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 13
 Current Site Name: PRESIDIO
 Location: SAN FRANCISCO, CA
 Number of Observing Monuments: 1
 Surveyed into National Network? YES

Monument Number: 7252
 Type of Monument: JPL DISK
 Monument Inscription: JPL 1981
 Systems Using Monument: MOBILE VLBI

Latitude: N 37 48' 19.31956''
 Longitude: W 122 27' 14.29061''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: -29.196 meters
 Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/03-SEP-86
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7252 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 84-03-22

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	BENCH MARK TIDAL 166	115.051	-15.746	61.960
--	PRESIDIO ARIES 1	-32.712	-9.822	-34.438
--	PRESIDIO ARIES 2	-25.569	33.491	19.378
--	TURK 1948 RM 1	112.778	-12.052	64.400
--	TURK 3 RM 1 BLM	100.578	-11.816	56.720

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	PRESIDIO ARIES 1	-43.050	-22.332	-0.691
--	PRESIDIO ARIES 2	24.222	-39.548	0.392

-- SITE SKETCH --

Site Number: 13
Current Site Name: PRESIDIO
Location: SAN FRANCISCO, CA

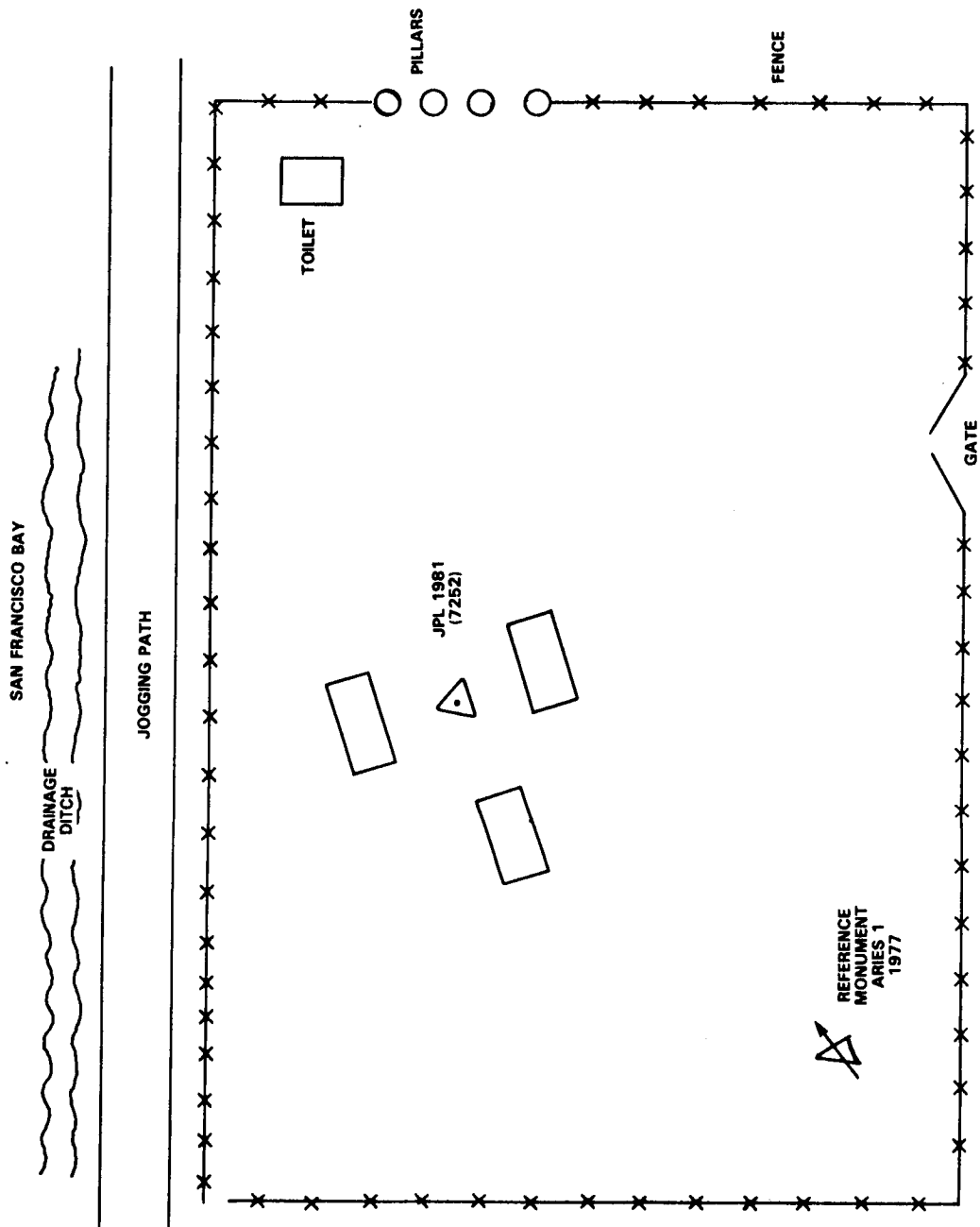


Figure 4-PRSDIO. PRESIDIO Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 13
 Current Site Name: PRESIDIO
 Location: SAN FRANCISCO, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7252	MV-1	72525101	06-JUN-77	09-JUN-77	NO
7252	MV-2	72525202	10-DEC-81	13-DEC-81	YES
7252	MV-2	72525203	25-AUG-83	26-AUG-83	YES
7252	MV-2	72525203	27-AUG-83	28-AUG-83	YES
7252	MV-2	72525204	23-FEB-84	23-FEB-84	YES
7252	MV-2	72525204	26-FEB-84	27-FEB-84	YES
7252	MV-2	72525205	10-MAR-85	11-MAR-85	YES
7252	MV-2	72525205	13-MAR-85	14-MAR-85	YES
7252	MV-3	72525306	19-OCT-85	25-OCT-85	YES
7252	MV-2	72525207	05-FEB-87	07-FEB-87	NO
7252	MV-3	72525308	17-MAY-87	18-MAY-87	NO
7252	MV-3	72525309	21-OCT-87	22-OCT-87	NO

-- SITE INFORMATION --

Site Number: 853

Current Site Name: PUNTA SA MENTA

Other Site Name: CAGLIARI

Location: PUNTA SA MENTA, CAGLIARI, ITALY

Geographic Region: MEDITERRANEAN

Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF MEDITERRANEAN TECTONICS.

Site Description: THIS STATION IS LOCATED ON THE SOUTHERN EDGE OF THE ITALIAN ISLAND OF SARDINIA IN THE MEDITERRANEAN SEA. THE SITE IS LOCATED SOUTH OF THE CITY OF CAGLIARI. IT IS EQUIPPED WITH A UNIVERSAL PAD COMPATIBLE FOR OCCUPATION BY THE MTLRS OR THE TLRS SYSTEMS.

Site Topo Map: UNKNOWN

-- GEOLOGICAL INFORMATION --

Geological Province: CAMPIDANO

Local Geology: BEDROCK COVERED WITH NEOZOIC ALLUVIUM

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 853
 Current Site Name: PUNTA SA MENTA
 Location: PUNTA SA MENTA, CAGLIARI, ITALY
 Number of Observing Monuments: 1
 Surveyed into National Network? NO

Monument Number: 7545
 Type of Monument: BRASS DISK
 Monument Inscription: 7545 1987
 Systems Using Monument: MOBILE LASER RANGING SYSTEMS

Latitude: N 39 08' 7.60000''
 Longitude: E 08 58' 21.98000''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 188.27 meters
 Survey Source/Date Reported: FRENCH GEODETIC SOCIETY/BFEC/09-OCT-87
 Datum/Ellipsoid: WGS 72

Comments: THESE DOPPLER COORDINATES ARE TO BE CONSIDERED TEMPORARY
 UNTIL THE COMPLETION OF THE WEGENER GPS PROGRAM.

Differential Coordinates FROM Observing Monument 7545 TO
 Reference Monuments and Other Observing Monuments

Data Source: BFEC 87-10-09

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	7545 RM 2 1987	-8.780	16.314	8.184
--	7545 RM 2 1987	7.366	3.515	-10.017
--	7545 RM 3 1987	-6.670	-9.526	10.534
--	CALIBRATION PIER REFERENCE POINT	-86.427	23.551	125.197
--	7545 AZIMUTH MARK 1987	-291.558	161.482	366.627
--	7545 A 1987	0.637	2.028	-1.159
--	7545 B 1987	2.439	1.612	-3.252
--	7545 C 1987	2.734	-1.075	-3.112
--	7545 D 1987	1.504	-1.783	-1.485

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	7545 RM 2 1987	10.216	17.484	0.412
--	7545 RM 2 1987	-12.708	2.323	-0.253
--	7545 RM 3 1987	13.267	-8.370	0.385
--	7545 A 1987	-1.496	1.904	0.002
--	7545 B 1987	-4.202	1.212	0.011
--	7545 C 1987	-4.013	-1.488	0.000
--	7545 D 1987	-1.914	-1.996	-0.001

-- SITE SKETCH --

Site Number: 853
Current Site Name: PUNTA SA MENTA
Location: PUNTA SA MENTA, CAGLIARI, ITALY

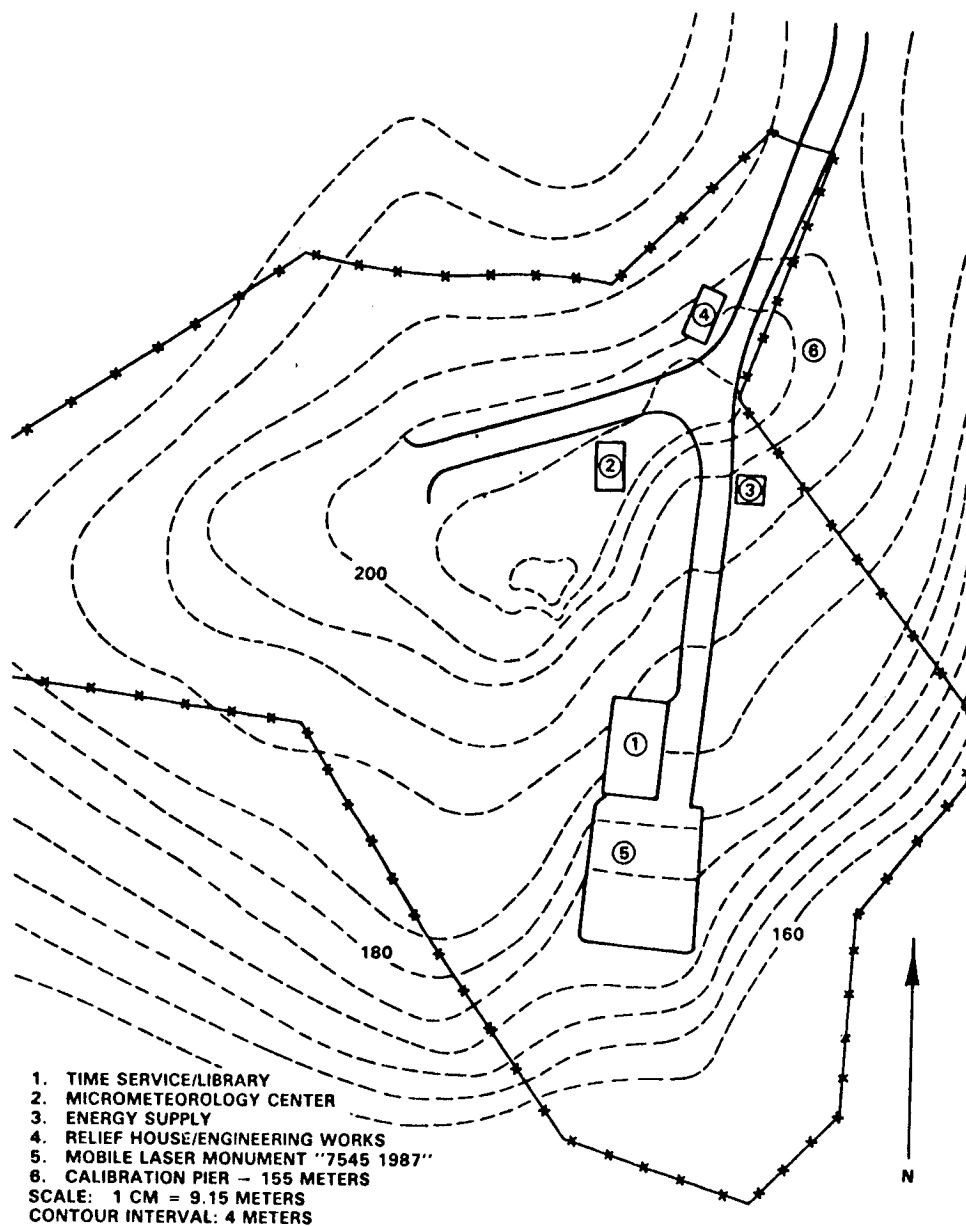


Figure 4-PUNTA. PUNTA SA MENTA Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 853
Current Site Name: PUNTA SA MENTA
Location: PUNTA SA MENTA, CAGLIARI, ITALY

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7545	MTLRS-2	75451601	19-OCT-85	07-DEC-85	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 14

Current Site Name: QUINCY

Other Site Name:

Location: QUINCY, CA

Geographic Region: CALIFORNIA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, PLATE STABILITY, POLAR MOTION/EARTH ROTATION, REGIONAL DEFORMATION, AND INTERCOMPARISON OF MEASUREMENT TECHNIQUES.

Site Description: THE SITE IS LOCATED IN THE PLUMAS NATIONAL FOREST, 25 MILES DUE NORTH OF QUINCY AND 100 MILES NORTH OF SACRAMENTO. THE ORIGINAL LOCATION, ADJACENT TO A HELIPORT STATION USED AS A BASE STATION FOR FIRE FIGHTING, WAS ABANDONED AFTER THE SITE BECAME A PRINCIPLE SITE IN THE CDP PROGRAM FOR CONTINUOUS OCCUPATION. THE NEW SITE IS 580 METERS WEST OF THE HELIPORT. BOTH VLBI AND SLR SYSTEMS OCCUPY THE NEW SITE.

Site Topo Map: QUINCY, CALIFORNIA, N3952.5/7.5, 1950, U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: SIERRA NEVADA

Local Geology: PALEOZOIC MARINE

Comments: THE ORIGINAL MOBLAS SITE WAS ON A HELICOPTER PAD. THE NEW SITE WAS RELOCATED TO THE WEST FOR CONTINUAL OCCUPATION.

-- MONUMENT INFORMATION --

Site Number: 14
 Current Site Name: QUINCY
 Location: QUINCY, CA
 Number of Observing Monuments: 4
 Surveyed into National Network? YES

Monument Number: 7051
 Type of Monument: STEEL PLATE 6'' X 6'' SQUARE
 Monument Inscription: "X"
 Systems Using Monument: MOBLAS

Latitude: N 39 58' 25.14526''
 Longitude: W 120 56' 18.62377''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 1068.041 meters
 Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/04-SEP-86
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS IS THE ABANDONED SITE ON HELIPORT. MOBLAS OPERATIONS
 MOVED TO MONUMENT 7109 IN OCTOBER 1981.

Differential Coordinates FROM Observing Monument 7051 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-04

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	DOPPLER 51213	-60.262	16.029	-19.897
--	MOBLAS 7051 ECC.	-8.949	-16.776	-22.622
--	QUINCY NCMN 1	-358.982	-287.082	145.505
--	QUINCY NCMN 2	-331.839	275.737	150.561
7109	7109 AUGUST 1981	-341.573	288.820	158.155
7221	7221 1982	-337.684	249.831	119.746
7260	QUINCY ARIES 1979	-90.679	32.754	-20.443
7886	7886-1982	-349.185	294.128	158.770

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	DOPPLER 51213	-26.321	-59.928	0.426
--	MOBLAS 7051 ECC.	-29.536	0.950	0.020
7260	QUINCY ARIES 1979	-27.571	-94.616	1.068

-- MONUMENT INFORMATION --

(Continued)

Site Number: 14
Current Site Name: QUINCY
Location: QUINCY, CA

Monument Number: 7109
Type of Monument: STANDARD NASA DISK
Monument Inscription: 7109 AUGUST 1981
Systems Using Monument: MOBLAS

Latitude: N 39 58' 30.57577''
Longitude: W 120 56' 37.22425''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 1114.396 meters
Survey Source/Date Reported: BFEC-NGS HAVAGO ADJUSTMENT/04-SEP-86
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS MONUMENT IS THE NEW SITE REPLACING HELIPORT LOCATION.

Differential Coordinates FROM Observing Monument 7109 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-04

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	DOPPLER 51213	281.312	-272.790	-178.052
--	MOBLAS 7051 ECC.	332.625	-305.595	-180.777
--	QUINCY NCMN 1	-17.408	-1.737	-12.651
--	QUINCY NCMN 2	9.735	-13.082	-7.594
7051	"X"	341.573	-288.820	-158.155
7221	7221 1982	3.890	-38.989	-38.409
7260	QUINCY ARIES 1979	250.894	-256.065	-178.598
7886	7886-1982	-7.612	5.308	0.614

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	QUINCY NCMN 1	-16.403	-14.037	-0.125
--	QUINCY NCMN 2	-9.812	15.076	-0.117
7221	7221 1982	-49.631	23.386	-0.584
7886	7886-1982	0.881	-9.258	-0.095

-- MONUMENT INFORMATION --

(Continued)

Site Number: 14
Current Site Name: QUINCY
Location: QUINCY, CA

Monument Number: 7221
Type of Monument: STANDARD NASA DISK
Monument Inscription: 7221 1982
Systems Using Monument: TLRS AND MOBILE VLBI

Latitude: N 39 58' 28.96682''
Longitude: W 120 56' 36.23901''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 1113.813 meters
Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/04-SEP-85
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS MONUMENT IS THE MOBILE SYSTEMS PAD NEAR THE NEW MOBLAS MONUMENT 7109.

Differential Coordinates FROM Observing Monument 7221 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-04

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	DOPPLER 51213	277.422	-233.801	-139.643
--	MOBLAS 7051 ECC.	328.735	-266.607	-142.368
--	QUINCY NCMN 1	-21.298	37.251	25.758
--	QUINCY NCMN 2	5.845	25.906	30.815
7051	"X"	337.684	-249.831	-119.746
7109	7109 AUGUST 1981	-3.890	38.989	38.409
7260	QUINCY ARIES 1979	247.005	-217.077	-140.189
7886	7886-1982	-11.501	44.297	39.023

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	QUINCY NCMN 1	33.228	-37.423	0.458
--	QUINCY NCMN 2	39.819	-8.309	0.467
7109	7109 AUGUST 1981	49.631	-23.386	0.583
7886	7886-1982	50.512	-32.644	0.489

-- MONUMENT INFORMATION --

(Continued)

Site Number: 14
Current Site Name: QUINCY
Location: QUINCY, CA

Monument Number: 7260
Type of Monument: USC & GS STATION DISK
Monument Inscription: QUINCY ARIES 1979
Systems Using Monument: MOBILE VLBI

Latitude: N 39 58' 24.25156''
Longitude: W 120 56' 22.61027''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 1069.105 meters
Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT/04-SEP-86
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7260 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-04

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	DOPPLER 51213	30.417	-16.725	0.546
--	MOBLAS 7051 ECC.	81.731	-49.530	-2.179
--	QUINCY NCMN 1	-268.303	254.328	165.947
--	QUINCY NCMN 2	-241.160	242.983	171.004
7051	"X"	90.679	-32.754	20.443
7109	7109 AUGUST 1981	-250.894	256.065	178.598
7221	7221 1982	-247.005	217.077	140.189
7886	7886-1982	-258.506	261.374	179.213

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	DOPPLER 51213	1.251	34.688	-0.642
--	MOBLAS 7051 ECC.	-1.964	95.566	-1.050
7051	"X"	27.572	94.615	-1.069

-- MONUMENT INFORMATION --

(Continued)

Site Number: 14
Current Site Name: QUINCY
Location: QUINCY, CA

Monument Number: 7886
Type of Monument: STANDARD NASA DISK
Monument Inscription: 7886-1982
Systems Using Monument: TLRS

Latitude: N 39 58' 30.60434''
Longitude: W 120 56' 37.61432''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 1114.301 meters
Survey Source/Date Reported: BFEC-NGS HAVAGO ADJUSTMENT/04-SEP-86
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7886 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-04

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	DOPPLER 51213	288.923	-278.099	-178.666
--	MOBLAS 7051 ECC.	340.236	-310.904	-181.392
--	QUINCY NCMN 1	-9.797	-7.046	-13.265
--	QUINCY NCMN 2	17.346	-18.391	-8.209
7051	"X"	349.185	-294.128	-158.770
7109	7109 AUGUST 1981	7.612	-5.308	-0.614
7221	7221 1982	11.501	-44.297	-39.023
7260	QUINCY ARIES 1979	258.506	-261.374	-179.213

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	QUINCY NCMN 1	-17.284	-4.779	-0.031
--	QUINCY NCMN 2	-10.693	24.334	-0.022
7109	7109 AUGUST 1981	-0.881	9.258	0.095
7221	7221 1982	-50.512	32.644	-0.489

-- SITE SKETCH --

Site Number: 14
Current Site Name: QUINCY
Location: QUINCY, CA

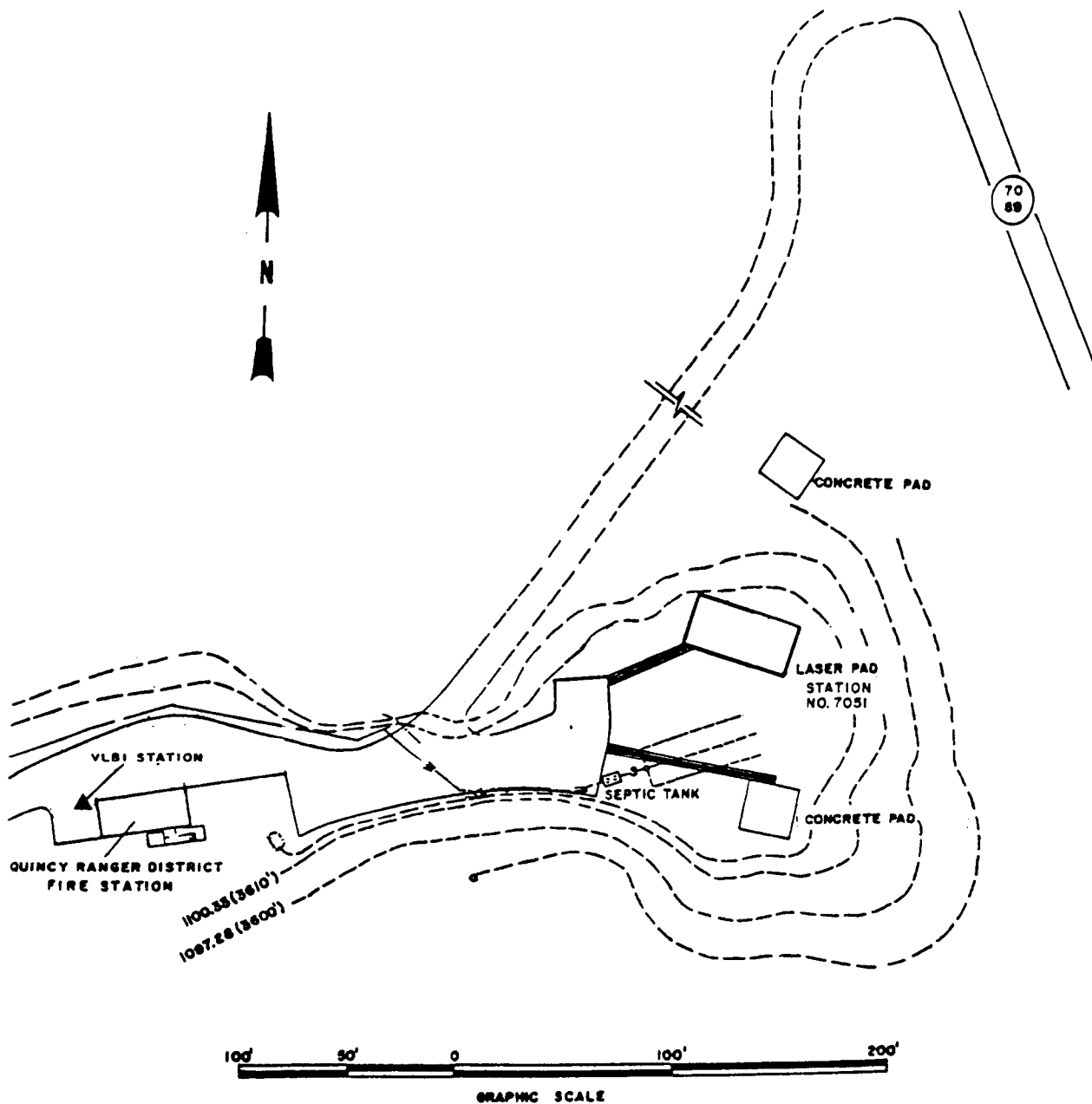


Figure 4-QUINCY-A. QUINCY Site Sketch (Old)

-- SITE SKETCH --

(Continued)

Site Number: 14
Current Site Name: QUINCY
Location: QUINCY, CA

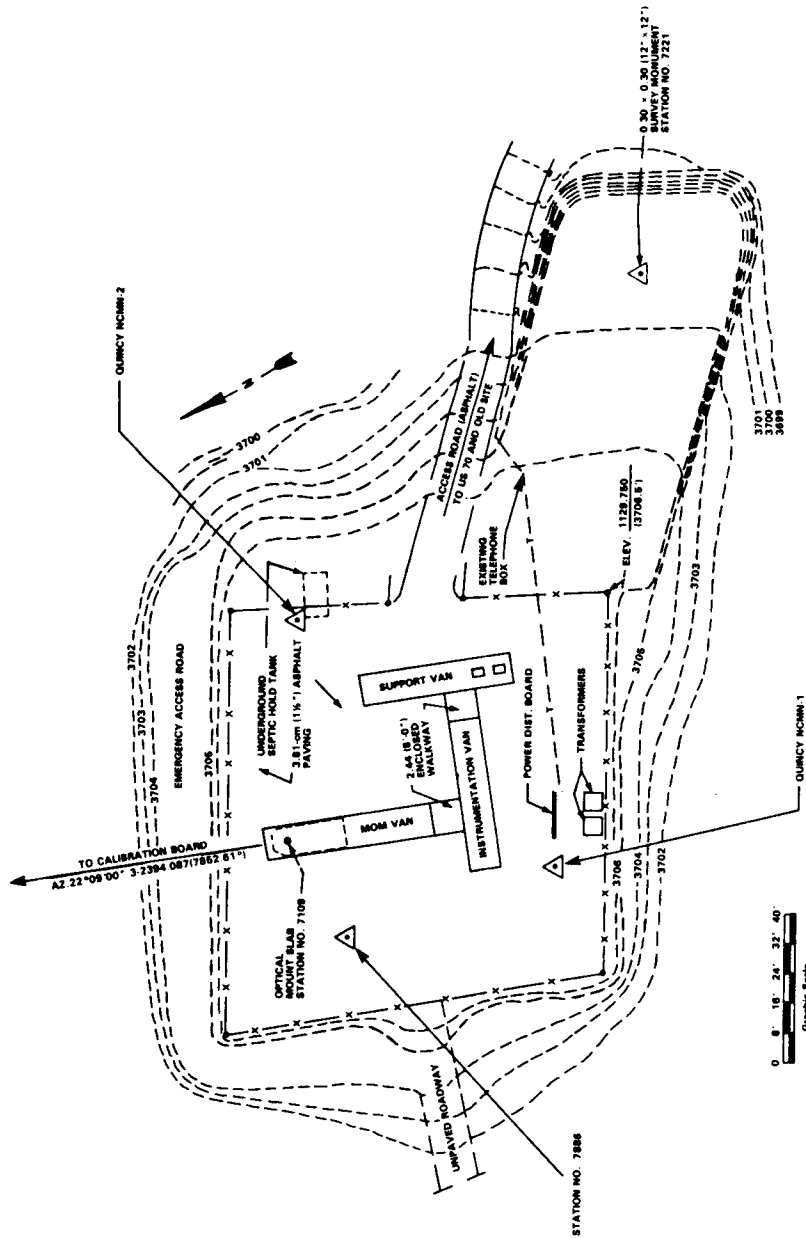


Figure 4-QUINCY-B. QUINCY Site Sketch (New)

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 14
Current Site Name: QUINCY
Location: QUINCY, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7051	MOBLAS-1	70510101	27-AUG-74	27-NOV-74	YES
7051	MOBLAS-2	70510202	09-JUL-76	30-NOV-76	YES
7051	MOBLAS-2	70510203	01-JAN-79	30-MAY-79	YES
7051	MOBLAS-8	70510804	01-FEB-81	21-MAY-81	YES
7109	MOBLAS-8	71090801	01-OCT-81	29-JUL-82	YES
7109	MOBLAS-8	71090802	15-AUG-82	12-MAR-85	YES
7109	MOBLAS-8	71090803	12-MAR-85	15-AUG-85	YES
7109	MOBLAS-8	71090804	15-AUG-85	18-SEP-86	YES
7109	MOBLAS-8	71090805	26-SEP-86	---	YES
7886	TLRS-1	78861101	05-JUL-83	28-AUG-83	YES
7886	TLRS-1	78861102	09-JUL-84	13-JUL-84	YES
7886	TLRS-1	78861103	08-AUG-84	07-SEP-84	YES
7886	TLRS-1	78861104	11-SEP-84	18-DEC-84	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7221	MV-2	72215201	21-OCT-82	22-OCT-82	YES
7221	MV-2	72215201	23-OCT-82	24-OCT-82	YES
7221	MV-2	72215202	27-JUN-83	28-JUN-83	YES
7221	MV-2	72215203	12-APR-84	13-APR-84	YES
7221	MV-3	72215304	12-MAY-85	15-MAY-85	YES
7221	MV-3	72215305	19-OCT-86	20-OCT-86	YES
7221	MV-3	72215306	14-MAY-87	15-MAY-87	NO
7221	MV-3	72215307	28-OCT-87	29-OCT-87	NO
7260	MV-1	72605101	09-MAY-79	09-MAY-79	NO

-- SITE INFORMATION --

Site Number: 43

Current Site Name: RICHMOND

Other Site Name:

Location: PERRINE, FL

Geographic Region: NORTH AMERICA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, PLATE STABILITY, AND POLAR MOTION/EARTH ROTATION.

Site Description: THE SITE IS LOCATED ON THE NAVAL OBSERVATORY TIMING STATION IN PERRINE, FLORIDA, ABOUT 25 MILES SOUTH OF MIAMI. A FIXED MARK III VLBI ANTENNA IS USED FOR VLBI MEASUREMENTS. A STANDARD NASA PAD COMPATIBLE FOR OCCUPATION BY TLRs AND MTLRS IS BEING CONSTRUCTED AT THE SITE TO BE USED AS AN INTERCOMPARISON STATION.

Site Topo Map: GOULDS, FLORIDA. 1945-56- (73PR), 7.5 QUAD, U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: COASTAL PLAIN PROVINCE

Local Geology: THICK SECTION OF RECENT AND QUATERNARY SANDS AND GRAVELS.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 43
 Current Site Name: RICHMOND
 Location: PERRINE, FL
 Number of Observing Monuments: 1
 Surveyed into National Network? NO

Monument Number: 7219
 Type of Monument: MEASUREMENT POINT ON ANTENNA
 Monument Inscription: NONE
 Systems Using Monument: 65-FOOT FIXED VLBI ANTENNA

Latitude: N 25 36' 48.13066''
 Longitude: W 80 23' 05.75405''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 25.877 meters
 Survey Source/Date Reported: NGS/01-FEB-84
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

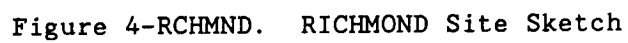
Differential Coordinates FROM Observing Monument 7219 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 84-08-28

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	CLN 1981	-4.705	27.782	37.183
--	CLNW 1981	-9.722	26.901	37.197
--	CLS 1981	1.510	-8.872	-41.416
--	CLSW 1981	-3.521	-9.682	-41.436
--	CLW 1981	-29.574	6.351	1.000
--	GPS (TOP OF GROUND PLANE)	51.311	14.378	5.196
--	GPS 1984 (BRASS BOLT)	50.366	19.959	2.483
--	TIMER 1962	59.722	35.213	29.919
--	TIMER RM 2 1962	30.243	16.166	1.150

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	CLN 1981	45.710	0.003	-9.335
--	CLNW 1981	45.709	-5.091	-9.302
--	CLS 1981	-41.237	0.006	-9.788
--	CLSW 1981	-41.237	-5.089	-9.835
--	CLW 1981	5.744	-28.098	-9.669
--	GPS (TOP OF GROUND PLANE)	7.108	52.992	-2.807
--	GPS 1984 (BRASS BOLT)	7.108	52.993	-9.084
--	TIMER 1962	37.674	64.765	-9.375
--	TIMER RM 2 1962	5.743	32.519	-9.320

Site Number: 43
Current Site Name: RICHMOND
Location: PERRINE, FL



-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 43
Current Site Name: RICHMOND
Location: PERRINE, FL

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7219	TVDS-2	72197501	21-DEC-83	21-DEC-83	YES
7219	TVDS-2	72197501	04-JAN-84	05-JAN-84	YES
7219	TVDS-2	72197501	14-JAN-84	15-JAN-84	YES
7219	TVDS-2	72197501	24-JAN-84	24-JAN-84	YES
7219	TVDS-2	72197501	03-FEB-84	04-FEB-84	YES
7219	TVDS-2	72197501	13-FEB-84	14-FEB-84	YES
7219	TVDS-2	72197501	18-FEB-84	19-FEB-84	YES
7219	TVDS-2	72197501	19-MAR-84	20-MAR-84	YES
7219	TVDS-2	72197501	25-MAR-84	26-MAR-84	YES
7219	TVDS-2	72197501	03-APR-84	04-APR-84	YES
7219	TVDS-2	72197501	08-APR-84	08-APR-84	YES
7219	TVDS-2	72197501	13-APR-84	14-APR-84	YES
7219	TVDS-2	72197501	18-APR-84	18-APR-84	YES
7219	TVDS-2	72197501	21-APR-84	22-APR-84	YES
7219	TVDS-2	72197501	26-APR-84	27-APR-84	YES
7219	TVDS-2	72197501	28-MAY-84	29-MAY-84	YES
7219	TVDS-2	72197501	02-JUN-84	03-JUN-84	YES
7219	TVDS-2	72197501	07-JUN-84	08-JUN-84	YES
7219	TVDS-2	72197501	17-JUN-84	18-JUN-84	YES
7219	TVDS-2	72197501	22-JUN-84	23-JUN-84	YES
7219	TVDS-2	72197501	27-JUN-84	28-JUN-84	YES
7219	TVDS-2	72197501	30-JUN-84	01-JUL-84	YES
7219	TVDS-2	72197501	02-JUL-84	03-JUL-84	YES
7219	TVDS-2	72197501	12-JUL-84	13-JUL-84	YES
7219	TVDS-2	72197501	17-JUL-84	18-JUL-84	YES
7219	TVDS-2	72197501	27-JUL-84	27-JUL-84	YES
7219	TVDS-2	72197501	03-JAN-85	03-JAN-85	YES
7219	TVDS-2	72197501	08-JAN-85	08-JAN-85	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 43
Current Site Name: RICHMOND
Location: PERRINE, FL

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7219	TVDS-2	72197501	13-JAN-85	13-JAN-85	YES
7219	TVDS-2	72197501	18-JAN-85	18-JAN-85	YES
7219	TVDS-2	72197501	28-JAN-85	28-JAN-85	YES
7219	TVDS-2	72197501	02-FEB-85	02-FEB-85	YES
7219	TVDS-2	72197501	07-FEB-85	07-FEB-85	YES
7219	TVDS-2	72197501	12-FEB-85	12-FEB-85	YES
7219	TVDS-2	72197501	17-FEB-85	17-FEB-85	YES
7219	TVDS-2	72197501	22-FEB-85	22-FEB-85	YES
7219	TVDS-2	72197501	27-FEB-85	27-FEB-85	YES
7219	65-FOOT	72197501	24-MAR-85	24-MAR-85	YES
7219	65-FOOT	72197501	29-MAR-85	29-MAR-85	YES
7219	65-FOOT	72197501	03-APR-85	03-APR-85	YES
7219	65-FOOT	72197501	08-APR-85	08-APR-85	YES
7219	65-FOOT	72197501	13-APR-85	13-APR-85	YES
7219	65-FOOT	72197501	18-APR-85	18-APR-85	YES
7219	65-FOOT	72197501	23-APR-85	23-APR-85	YES
7219	65-FOOT	72197501	28-APR-85	28-APR-85	YES
7219	65-FOOT	72197501	13-MAY-85	13-MAY-85	YES
7219	65-FOOT	72197501	18-MAY-85	18-MAY-85	YES
7219	65-FOOT	72197501	23-MAY-85	23-MAY-85	YES
7219	65-FOOT	72197501	28-MAY-85	28-MAY-85	YES
7219	65-FOOT	72197501	02-JUN-85	02-JUN-85	YES
7219	65-FOOT	72197501	07-JUN-85	07-JUN-85	YES
7219	65-FOOT	72197501	12-JUN-85	12-JUN-85	YES
7219	65-FOOT	72197501	17-JUN-85	17-JUN-85	YES
7219	65-FOOT	72197501	22-JUN-85	22-JUN-85	YES
7219	65-FOOT	72197501	27-JUN-85	27-JUN-85	YES
7219	65-FOOT	72197501	02-JUL-85	02-JUL-85	YES
7219	65-FOOT	72197501	07-JUL-85	07-JUL-85	YES
7219	65-FOOT	72197501	12-JUL-85	12-JUL-85	YES
7219	65-FOOT	72197501	17-JUL-85	17-JUL-85	YES
7219	65-FOOT	72197501	22-JUL-85	22-JUL-85	YES
7219	65-FOOT	72197501	27-JUL-85	27-JUL-85	YES
7219	65-FOOT	72197501	01-AUG-85	01-AUG-85	YES
7219	65-FOOT	72197501	06-AUG-85	06-AUG-85	YES
7219	65-FOOT	72197501	11-AUG-85	11-AUG-85	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 43
Current Site Name: RICHMOND
Location: PERRINE, FL

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7219	65-FOOT	72197501	16-AUG-85	16-AUG-85	YES
7219	65-FOOT	72197501	21-AUG-85	21-AUG-85	YES
7219	65-FOOT	72197501	26-AUG-85	26-AUG-85	YES
7219	65-FOOT	72197501	31-AUG-85	31-AUG-85	YES
7219	65-FOOT	72197501	05-SEP-85	05-SEP-85	YES
7219	65-FOOT	72197501	10-SEP-85	10-SEP-85	YES
7219	65-FOOT	72197501	15-SEP-85	15-SEP-85	YES
7219	65-FOOT	72197501	20-SEP-85	20-SEP-85	YES
7219	65-FOOT	72197501	25-SEP-85	25-SEP-85	YES
7219	65-FOOT	72197501	30-SEP-85	30-SEP-85	YES
7219	65-FOOT	72197501	05-OCT-85	05-OCT-85	YES
7219	65-FOOT	72197501	10-OCT-85	10-OCT-85	YES
7219	65-FOOT	72197501	15-OCT-85	15-OCT-85	YES
7219	65-FOOT	72197501	20-OCT-85	20-OCT-85	YES
7219	65-FOOT	72197501	25-OCT-85	25-OCT-85	YES
7219	65-FOOT	72197501	09-NOV-85	09-NOV-85	YES
7219	65-FOOT	72197501	14-NOV-85	14-NOV-85	YES
7219	65-FOOT	72197501	29-NOV-85	29-NOV-85	YES
7219	65-FOOT	72197501	04-DEC-85	04-DEC-85	YES
7219	65-FOOT	72197501	09-DEC-85	09-DEC-85	YES
7219	65-FOOT	72197501	14-DEC-85	14-DEC-85	YES
7219	65-FOOT	72197501	19-DEC-85	19-DEC-85	YES
7219	65-FOOT	72197501	29-MAY-87	29-MAY-87	NO
7219	65-FOOT	72197501	28-JUN-87	28-JUN-87	NO
7219	65-FOOT	72197501	11-JUL-87	11-JUL-87	NO
7219	65-FOOT	72197501	18-JUL-87	18-JUL-87	NO
7219	65-FOOT	72197501	21-JUL-87	21-JUL-87	NO
7219	65-FOOT	72197501	02-AUG-87	02-AUG-87	NO
7219	65-FOOT	72197501	04-AUG-87	04-AUG-87	NO
7219	65-FOOT	72197501	05-AUG-87	05-AUG-87	NO
7219	65-FOOT	72197501	08-AUG-87	08-AUG-87	NO
7219	65-FOOT	72197501	19-AUG-87	19-AUG-87	NO
7219	65-FOOT	72197501	24-AUG-87	24-AUG-87	NO
7219	65-FOOT	72197501	27-AUG-87	27-AUG-87	NO
7219	65-FOOT	72197501	26-SEP-87	26-SEP-87	NO

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 43
Current Site Name: RICHMOND
Location: PERRINE, FL

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7219	65-FOOT	72197501	21-OCT-87	21-OCT-87	NO
7219	65-FOOT	72197501	30-NOV-87	30-NOV-87	NO
7219	65-FOOT	72197501	20-DEC-87	20-DEC-87	NO

-- SITE INFORMATION --

Site Number: 672

Current Site Name: ROUMELLI

Other Site Name:

Location: ROUMELLI, CRETE, GREECE

Geographic Region: MEDITERRANEAN

Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF MEDITERRANEAN TECTONICS.

Site Description: THIS WEGENER-MEDLAS SITE IS LOCATED ON THE ISLAND OF CRETE OFF THE COAST OF GREECE IN THE MEDITERRANEAN SEA. THIS SITE IS COMPATIBLE FOR OCCUPATION BY ANY MOBILE LASER, AMERICAN OR EUROPEAN. THE TLRS-1 OCCUPIED THIS SITE IN THE MEDITERRANEAN CAMPAIGN OF 1987.

Site Topo Map: UNKNOWN

-- GEOLOGICAL INFORMATION --

Geological Province: NONE

Local Geology: UNKNOWN

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 672
 Current Site Name: ROUMELLI
 Location: ROUMELLI, CRETE, GREECE
 Number of Observing Monuments: 1
 Surveyed into National Network? NO

Monument Number: 7517
 Type of Monument: BRASS DISK
 Monument Inscription: 7517
 Systems Using Monument: MOBILE LASER RANGING SYSTEMS

Latitude: N 35 24' 15.15000''
 Longitude: E 24 41' 38.54000
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 108.590 meters
 Survey Source/Date Reported: GREEK HELLENIC MAPPING AGENCY/BFEC/22-JUL-87
 Datum/Ellipsoid: WGS 72

Comments: THIS STATION WAS HELD FIXED WITH PRELIMINARY COORDINATES
 DETERMINED BY GHMA AND THROUGH MTLRS OCCUPATIONS.

Differential Coordinates FROM Observing Monument 7517 TO
 Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	7517 RM1 1987	-20.147	6.297	14.692
--	7517 RM2 1987	-3.856	28.415	-6.781
--	7517 RM3 1987	4.840	-21.680	2.447
--	CALIBRATION PIER REFERENCE POINT	-50.982	177.383	-2.328
--	7517 AZ MARK 1987	42.806	-104.631	0.773
--	7517 A 1987	-0.013	2.089	-1.221
--	7517 B 1987	1.700	2.103	-3.403
--	7517 C 1987	2.727	-0.395	-3.241
--	7517 D 1987	1.823	-1.360	-1.536

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	7517 RM1 1987	21.055	14.138	-4.266
--	7517 RM2 1987	-10.375	27.427	2.893
--	7517 RM3 1987	4.694	-21.719	-2.381
--	7517 A 1987	-1.494	1.904	-0.006
--	7517 B 1987	-4.177	1.200	0.004
--	7517 C 1987	-3.982	-1.498	0.008
--	7517 D 1987	-1.883	-1.997	-0.002

-- SITE SKETCH --

Site Number: 672
Current Site Name: ROUMELLI
Location: ROUMELLI, CRETE, GREECE

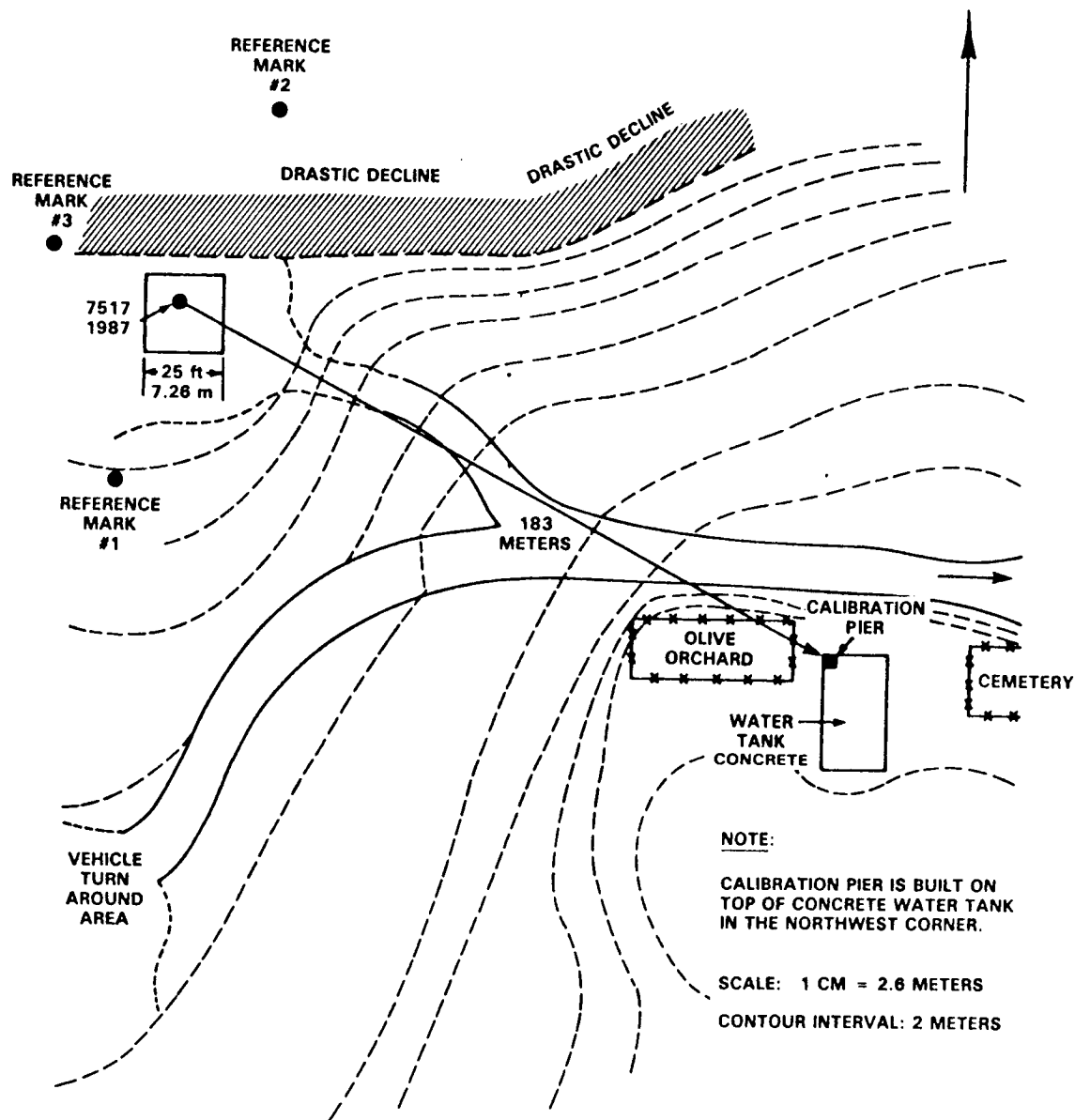


Figure 4-ROUMLI. ROUMELLI Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 672
Current Site Name: ROUMELLI
Location: ROUMELLI, CRETE, GREECE

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7517	MTLRS-2	75171601	27-MAY-86	31-AUG-86	YES
7517	TLRS-1	75171102	20-JUL-87	28-AUG-87	NO
7517	MTLRS-1	75171503	02-NOV-87	11-DEC-87	NO

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 802

Current Site Name: SAND POINT

Other Site Name:

Location: SAND POINT, AK

Geographic Region: ALASKA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION.

Site Description: THE SITE IS LOCATED ON THE NORTHWEST END OF POPOF ISLAND IN THE ALLEUTIAN ISLAND CHAIN OFF THE ALASKAN COAST. THE SITE IS IN THE PARKING LOT OF A SCHOOL ON HIGH GROUND. THE MONUMENT IS COMPATIBLE FOR OCCUPATION BY THE MOBILE VLBI SYSTEMS ONLY.

Site Topo Map: PORT MOLLER (B-2), ALASKA, N5515-W16020/15 X 20, 1963.
U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: ALLEUTIAN ISLANDS

Local Geology: TERTIARY EXTRUSIVE VOLCANIC; DACITE OR ANDESITE. THIS SITE WAS THE ONLY LOCATION FEASIBLE IN THE SEISMICALLY LOCKED SHUMAGIN GAP.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 802
 Current Site Name: SAND POINT
 Location: SAND POINT, AK
 Number of Observing Monuments: 1
 Surveyed into National Network? NO

Monument Number: 7280
 Type of Monument: NGS MODIFIED SLEEVED CLASS A BENCH MARK
 Monument Inscription: NONE
 Systems Using Monument: MOBILE VLBI

Latitude: N 55 21' 8.1260''
 Longitude: W 160 28' 32.2500''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 101.744 meters
 Survey Source/Date Reported: NGS GPS RESULTS/01-JAN-86
 Datum/Ellipsoid: WGS 72

Comments: NONE

Differential Coordinates FROM Observing Monument 7280 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS GPS RESULTS JANUARY 1986

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	JOEE	-462.964	2757.701	264.599
--	PROM	-2706.756	1200.928	-1573.499
--	SAN 2	35.071	-56.127	5.771
--	SAN 4	-68.953	46.438	-38.520
--	SAND 1	59.762	21.762	43.167

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	SAN 2	15.042	64.621	-3.380
--	SAN 4	-62.595	-66.813	-3.565
--	SAND 1	76.862	-0.538	-0.646

-- SITE SKETCH --

Site Number: 802
Current Site Name: SAND POINT
Location: SAND POINT, AK

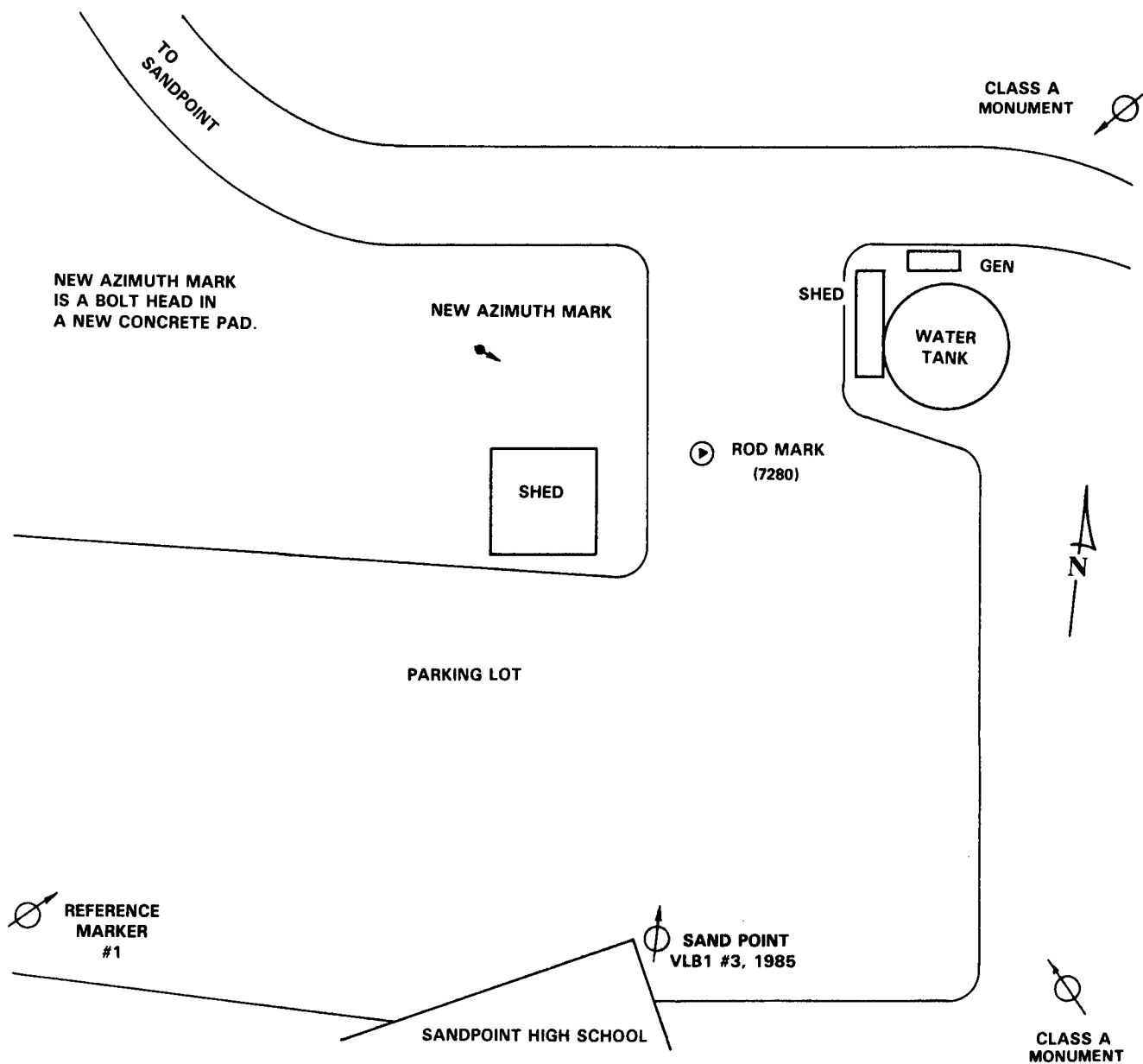


Figure 4-SND PT. SAND POINT Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 802
Current Site Name: SAND POINT
Location: SAND POINT, AK

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7280	MV-2	72805201	25-JUL-84	26-JUL-84	YES
7280	MV-3	72805302	25-JUL-85	26-JUL-85	YES
7280	MV-3	72805303	30-JUL-86	01-AUG-86	YES
7280	MV-2	72805204	24-JUL-87	26-JUL-87	NO

-- SITE INFORMATION --

Site Number: 640

Current Site Name: SAN FERNANDO

Other Site Name:

Location: SAN FERNANDO, SPAIN

Geographic Region: MEDITERRANEAN

Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF MEDITERRANEAN TECTONICS.

Site Description: THE SITE IS LOCATED IN SOUTHERN SPAIN NEAR SAN FERNANDO BY THE BAY OF CADIZ AT THE INSTITUTO Y OBSERVATORIO DE MARINA. A FIXED LASER HAS BEEN USED FOR LASER RANGING SINCE 1968. IN 1980 THE LASER MOVED TO THE DOME OF THE MAIN BUILDING. THIS RUBY LASER WAS MOVED FROM GRASSE IN SEPTEMBER 1983 AND HAS BEEN OPERATIONAL SINCE JANUARY 1984.

Site Topo Map: UNKNOWN

-- GEOLOGICAL INFORMATION --

Geological Province: UNKNOWN

Local Geology: NOT AVAILABLE

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 640
 Current Site Name: SAN FERNANDO
 Location: SAN FERNANDO, SPAIN
 Number of Observing Monuments: 1
 Surveyed into National Network? NO

Monument Number: 7824
 Type of Monument: INTERSECTION OF AXES OF ROTATION
 Monument Inscription: NONE
 Systems Using Monument: FIXED LASER

Latitude: N 36 27' 59.5432''
 Longitude: W 6 12' 14.9981''
 Elevation Above MSL (Geoid): 53.196 meters
 Height Above Ellipsoid: NOT AVAILABLE
 Survey Source/Date Reported: IGN/06-JUN-86
 Datum/Ellipsoid: E.D. 79 MUNICH/INTERNATIONAL

Comments: NONE

Differential Coordinates FROM Observing Monument 7824 TO
 Reference Monuments and Other Observing Monuments

Data Source: IGN SPAIN

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	ASTROLABIO DANJON SFA	-53.170	34.589	30.785
--	BAKER NUNN CAMERA (SA04)	116.814	-104.563	-218.907
--	FIRST ORDER GEODETIL PILLAR (1038)	-8.660	16.239	-2.872
--	GEODETIC PILLAR NORTHEAST	24.251	12.952	28.218
--	GEODETIC PILLAR NORTHWEST	-15.154	-13.951	1.499
--	TRANET2 DOPPLER ANTENNA	-12.377	-12.422	2.968

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	ASTROLABIO DANJON SFA	59.224	26.945	-27.218
--	FIRST ORDER GEODETIL PILLAR (1038)	4.291	15.096	-10.042
--	GEODETIC PILLAR NORTHEAST	9.645	15.229	-9.966
--	GEODETIC PILLAR NORTHWEST	8.813	-15.774	-10.012
--	TRANET2 DOPPLER ANTENNA	8.506	-13.945	-7.052

-- SITE SKETCH --

Site Number: 640
Current Site Name: SAN FERNANDO
Location: SAN FERNANDO, SPAIN

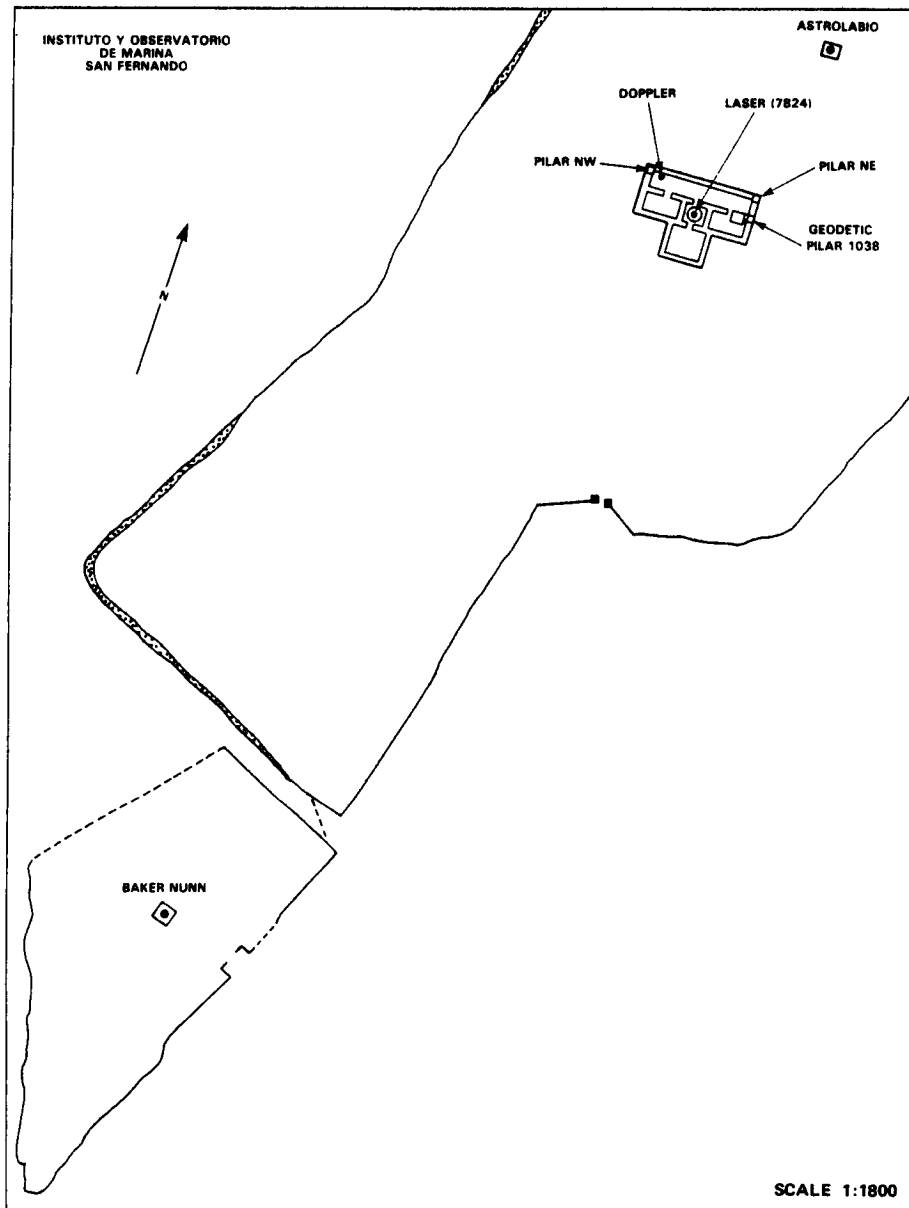


Figure 4-SN FER. SAN FERNANDO Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 640
Current Site Name: SAN FERNANDO
Location: SAN FERNANDO, SPAIN

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7824	SPN FIXED	78244501	01-MAY-76	---	NO

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- SITE INFORMATION --

Site Number: 405

Current Site Name: SANTA PAULA

Other Site Name:

Location: SANTA PAULA, CA

Geographic Region: CALIFORNIA

Tectonic Plate: PACIFIC

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION.

Site Description: THE STATION IS LOCATED ON PRIVATE PROPERTY ABOUT FOUR MILES EAST-NORTHEAST OF SANTA PAULA, CALIFORNIA, 0.8 MILE NORTH OF STATE HIGHWAY 126, AND 83 FEET EAST OF THE CENTER LINE OF TOLAND ROAD. THE SITE IS EQUIPPED WITH ONE OBSERVING MONUMENT THAT PROJECTS TWO INCHES ABOVE THE GROUND SURFACE. SINCE A PAD IS NOT LOCATED AT THIS SITE, IT IS COMPATIBLE FOR OCCUPATION BY THE MOBILE VLBI SYSTEMS ONLY.

Site Topo Map: FILLMORE, CALIFORNIA. N3422.5-W11852.5/7.5, 1951, U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: TRANSVERSE RANGES

Local Geology: QUATERNARY ALLUVIUM

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 405
 Current Site Name: SANTA PAULA
 Location: SANTA PAULA, CA
 Number of Observing Monuments: 1
 Surveyed into National Network? NO

Monument Number: 7255
 Type of Monument: NGS STATION DISK
 Monument Inscription: SANTA PAULA NCMN 1981
 Systems Using Monument: MOBILE VLBI

Latitude: N 34 23' 16.40220''
 Longitude: W 118 59' 52.30140''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 190.990 meters
 Survey Source/Date Reported: NGS/15-APR-82
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: NONE

Differential Coordinates FROM Observing Monument 7255 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-03

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	SANTA PAULA NCMN AZ. MK.	100.287	-797.380	-1117.426
--	SANTA PAULA NCMN NO 1 1981	30.645	-13.196	-2.676
--	SANTA PAULA NCMN NO 2 1981	-11.939	-11.813	-28.911
--	SANTA PAULA NCMN NO 3 1981	-8.300	13.497	14.160

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	SANTA PAULA NCMN NO 1 1981	-0.336	33.200	-4.248
--	SANTA PAULA NCMN NO 2 1981	-32.963	-4.715	-3.023
--	SANTA PAULA NCMN NO 3 1981	16.080	-13.803	1.575

-- SITE SKETCH --

Site Number: 405
Current Site Name: SANTA PAULA
Location: SANTA PAULA, CA

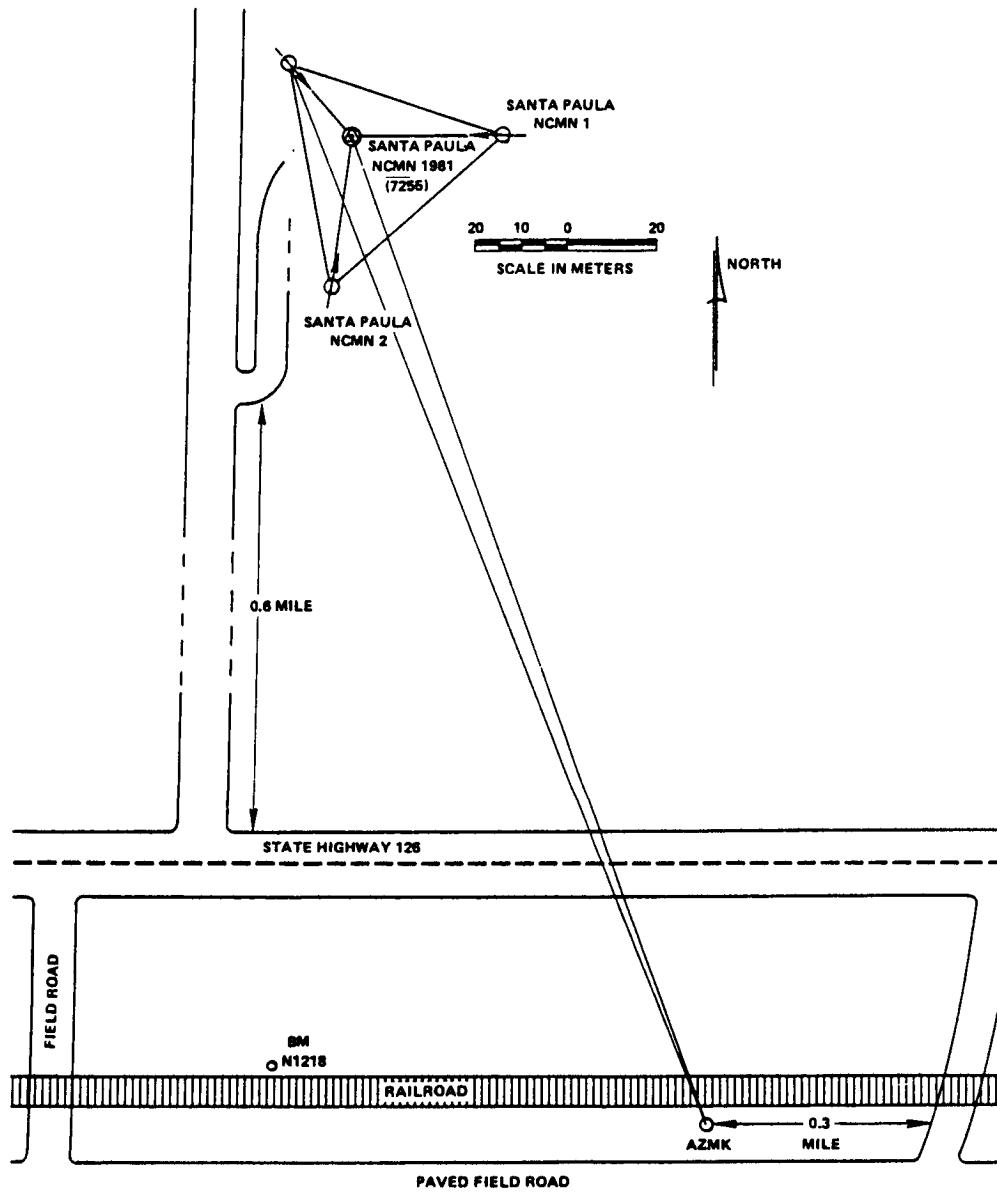


Figure 4-S PAUL. SANTA PAULA Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 405
Current Site Name: SANTA PAULA
Location: SANTA PAULA, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----

-- No Previous Occupations --

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7255	MV-2	72555201	31-AUG-81	01-SEP-81	YES
7255	MV-2	72555202	31-AUG-83	01-SEP-83	YES
7255	MV-2	72555203	29-FEB-84	01-MAR-84	YES
7255	MV-3	72555304	09-JAN-85	10-JAN-85	YES
7255	MV-2	72555205	28-MAR-87	29-MAR-87	NO
7255	MV-2	72255206	10-DEC-87	12-DEC-87	NO

-- SITE INFORMATION --

Site Number: 99

Current Site Name: SANTIAGO

Other Site Name:

Location: SANTIAGO, CHILE

Geographic Region: SOUTH AMERICA

Tectonic Plate: SOUTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF GLOBAL PLATE MOTION, AND INTERNAL PLATE DEFORMATION/PLATE STABILITY.

Site Description: THE SITE IS ON THE GROUNDS OF NASA'S SANTIAGO TRACKING STATION WHICH IS LOCATED ON A FLAT AREA SURROUNDED BY FLAT HILLS, 31.5 KILOMETERS NORTH OF PLAZA BULNAS, SANTIAGO, AND 15.5 KILOMETERS NORTHWEST OF PELDEHUE. THE SITE IS IN A CLEARED AREA WITH SPARSE TREE COVER. A STANDARD PAD AT THE SITE IS COMPATIBLE FOR OCCUPATION BY THE TLRS.

Site Topo Map: NOT AVAILABLE

-- GEOLOGICAL INFORMATION --

Geological Province: ANDEAN CORDILLERA

Local Geology: THE TOP LAYER OF SOIL FROM 0.91 METERS TO 1.52 METERS IS COMPOSED OF CLAY AND IS SUBJECT TO EXTENSIVE SWELLING AND SHRINKING. CLAY BELOW THE TOP LAYER IS A RATHER STABLE COMPACT MATERIAL.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 99
Current Site Name: SANTIAGO
Location: SANTIAGO, CHILE
Number of Observing Monuments: 1
Surveyed into National Network? NO

Monument Number: 7400
Type of Monument: STANDARD NASA DISK
Monument Inscription: NONE
Systems Using Monument: MOBILE LASERS

Latitude: S 33 08' 44.8704''
Longitude: W 70 39' 59.4861''
Elevation Above MSL (Geoid): 690.361 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: BFEC/01-JAN-86
Datum/Ellipsoid: SOUTH AMERICAN DATUM 1956/HAYFORD
INTERNATIONAL 1924

Comments: NONE

Differential Coordinates FROM Observing Monument 7400 TO
Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 99
Current Site Name: SANTIAGO
Location: SANTIAGO, CHILE

-- Site Sketch Not Available --

Figure 4-SNTAGO. SANTIAGO Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 99
Current Site Name: SANTIAGO
Location: SANTIAGO, CHILE

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7400	TLRS-1	74001101	07-MAR-84	10-MAY-84	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
--------------------	---------------------	--------------------------	------------------	----------------	-----------------

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 102

Current Site Name: SAO PAULO

Other Site Name:

Location: SAO PAULO, BRAZIL

Geographic Region: SOUTH AMERICA

Tectonic Plate: SOUTH AMERICAN

-- Site Information Not Yet Available --

-- SITE INFORMATION --

Site Number: 660

Current Site Name: SHANGHAI

Other Site Name:

Location: SHANGHAI OBS., PEOPLES REPUBLIC OF CHINA

Geographic Region: ASIA

Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF GLOBAL PLATE MOTION.

Site Description: THE STATION IS LOCATED AT THE SHANGHAI OBSERVATORY IN THE ZI-KA-WEI SECTION. THE LASER SYSTEM BEGAN OPERATIONS IN 1975 AND WAS TERMINATED IN DECEMBER 1982. A NEW LASER WAS INTEGRATED AND BECAME OPERATIONAL IN 1984. A 25-METER ANTENNA HAS BEEN CONSTRUCTED AT THIS SITE FOR VLBI MEASUREMENTS BUT IT IS NOT YET OPERATIONAL.

Site Topo Map: UNKNOWN

-- GEOLOGICAL INFORMATION --

Geological Province: ALLUVIAL PLAIN OF THE YANGTSE DELTA.

Local Geology: SO-SE IS A SMALL HILL IN THE ALLUVIUM PLAINS OF THE YANGTSE DELTA, INTERBEDDED WITH VOLCANIC SERIES OF THE MESOZOIC ERA.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 660
Current Site Name: SHANGHAI
Location: SHANGHAI OBS., PEOPLES REPUBLIC OF CHINA
Number of Observing Monuments: 3
Surveyed into National Network? NO

Monument Number: 7226
Type of Monument: VLBI REFERENCE POINT ON ANTENNA
Monument Inscription: NONE
Systems Using Monument: 6-METER ANTENNA

Latitude: N 31.19019241
Longitude: E 121.42953729
Elevation Above MSL (Geoid): 16.97 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: YE SHU-HUA, DIRECTOR SHANGHAI OBSERVATORY/
02-JUN-86
Datum/Ellipsoid: UNKNOWN

Comments: THIS ANTENNA IS TEMPORARY UNTIL THE 25-METER ANTENNA IS OPERATIONAL.

Differential Coordinates FROM Observing Monument 7226 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 660
Current Site Name: SHANGHAI
Location: SHANGHAI OBS., PEOPLES REPUBLIC OF CHINA

Monument Number: 7227
Type of Monument: VLBI REFERENCE POINT
Monument Inscription: NONE
Systems Using Monument: 25-METER ANTENNA

Latitude:
Longitude:
Elevation Above MSL (Geoid):
Height Above Ellipsoid:
Survey Source/Date Reported:
Datum/Ellipsoid:

Comments: THIS ANTENNA IS SCHEDULED TO BECOME OPERATIONAL IN JUNE 1987.
NO COORDINATES ARE AVAILABLE AT PRESENT.

Differential Coordinates FROM Observing Monument 7227 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 660
Current Site Name: SHANGHAI
Location: SHANGHAI OBS., PEOPLES REPUBLIC OF CHINA

Monument Number: 7837
Type of Monument: CENTER OF 45 DEGREE BENDING MIRROR
(REFERENCE POINT ON MOUNT)
Monument Inscription: NONE
Systems Using Monument: FIXED LASER

Latitude: N 31.097527357
Longitude: E 121.191740599
Elevation Above MSL (Geoid): 29.023 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: LPM 8402/01-NOV-83
Datum/Ellipsoid: WGS 84

Comments: NONE

Differential Coordinates FROM Observing Monument 7837 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 660
Current Site Name: SHANGHAI
Location: SHANGHAI OBS., PEOPLES REPUBLIC OF CHINA

-- Site Sketch Not Available --

Figure 4-SHNGHI. SHANGHAI Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 660
Current Site Name: SHANGHAI
Location: SHANGHAI OBS., PEOPLES REPUBLIC OF CHINA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7837	CHILAS	78373701	01-AUG-83	11-DEC-85	YES
7837	CHILAS	78373702	12-DEC-85	---	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 870

Current Site Name: SIMOSATO

Other Site Name:

Location: SIMOSATO HYDROGRAPHIC OBSERVATORY, JAPAN

Geographic Region: PACIFIC

Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, PLATE STABILITY, POLAR MOTION/EARTH ROTATION, AND SLR TECHNIQUE DEVELOPMENT.

Site Description: THE SIMOSATO HYDROGRAPHIC OBSERVATORY, ONE OF THE FOUR HYDROGRAPHIC OBSERVATORIES OF THE MARITIME SAFETY AGENCY, IS LOCATED AT SIMOSATO NEAR THE SOUTHERN TIP OF KII PENINSULA, HONSHU, MAINLAND JAPAN. A SATELLITE LASER RANGING SYSTEM WAS INSTALLED AT THE OBSERVATORY IN EARLY MARCH 1982. THE SYSTEM NOT ONLY PROVIDES DATA FOR THE STUDY OF POLAR MOTION AND EARTH ROTATION, BUT ALSO FOR STUDIES ON THE TOKYO DATUM.

Site Topo Map: AVAILABLE FROM HYDROGRAPHIC OBSERVATORY.

-- GEOLOGICAL INFORMATION --

Geological Province: SOUTHWEST JAPAN; OUTER ZONE; SHIMONO BELT

Local Geology: KUMANO ACIDIC IGNEOUS ROCKS OVERLAIN BY MIDDLE MIOCENE SIMOSATO SANDSTONE AND SILTSTONE. THESE ROCKS ARE OVERLAIN BY PLEISTOCENE MARINE TERRACE DEPOSITS.

Comments: THE SYSTEM HAS ATTAINED A RANGING ACCURACY FOR LAGEOS OF LESS THAN TEN CENTIMETERS.

-- MONUMENT INFORMATION --

Site Number: 870
 Current Site Name: SIMOSATO
 Location: SIMOSATO HYDROGRAPHIC OBSERVATORY, JAPAN
 Number of Observing Monuments: 1
 Surveyed into National Network? YES

Monument Number: 7838
 Type of Monument: CENTER OF THE RING OF THE BASE PIER
 Monument Inscription: NONE
 Systems Using Monument: SHOLAS FIXED LASER

Latitude: N 33 34' 27.496''
 Longitude: E 135 56' 23.537''
 Elevation Above MSL (Geoid): 60.34 meters
 Height Above Ellipsoid: NOT AVAILABLE
 Survey Source/Date Reported: JHD TOKYO-SHO/31-JAN-82
 Datum/Ellipsoid: TOKYO/BESSEL

Comments: REFERENCE POINT OF THE SLR (INTERSECTION OF EL-AZ AXES) IS
 2.106 METERS HIGH ABOVE THE CENTER OF THE RING OF THE BASE PIER.

Differential Coordinates FROM Observing Monument 7838 TO
 Reference Monuments and Other Observing Monuments

Data Source: HYDROGRAPHIC OBS., JHD, NO.17, 1983

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	FIDUCIAL STONE MARKER	13.703	-2.450	13.823

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	FIDUCIAL STONE MARKER	17.905	-7.770	-1.979

-- SITE SKETCH --

Site Number: 870
Current Site Name: SIMOSATO
Location: SIMOSATO HYDROGRAPHIC OBSERVATORY, JAPAN

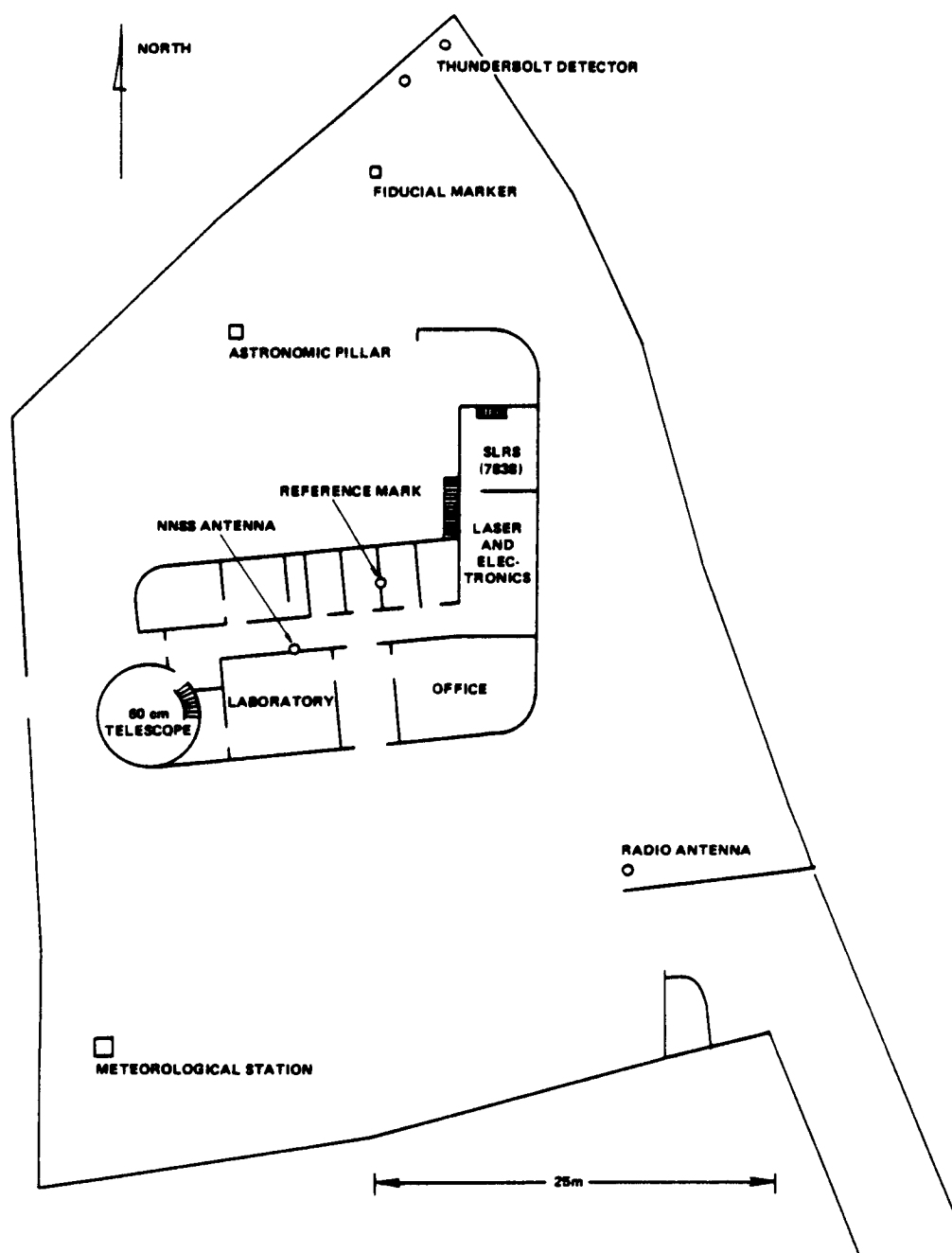


Figure 4-SMSATO. SIMOSATO Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 870
Current Site Name: SIMOSATO
Location: SIMOSATO HYDROGRAPHIC OBSERVATORY, JAPAN

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7838	SHOLAS	78383601	01-MAR-82	---	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- SITE INFORMATION --

Site Number: 821

Current Site Name: SOCORRO ISLAND

Other Site Name:

Location: SOCORRO, REVILLAGIGEDO ISLANDS, MEXICO

Geographic Region: NORTH AMERICA

Tectonic Plate: PACIFIC

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, AND REGIONAL DEFORMATION.

Site Description: THE STATION IS LOCATED ON THE SOUTHERN TIP OF SOCORRO ISLAND IN THE REVILLAGIGEDO GROUP OF ISLANDS OFF THE WEST COAST OF MEXICO. THE SITE IS LOCATED AT BAHIA LUCIO GALLARDO PAVON COVE (BINNER'S COVE) 800 METERS NORTHWEST OF THE MEXICAN NAVAL STATION. A STANDARD SLR PAD HAS BEEN CONSTRUCTED TO ACCOMMODATE ANY MOBILE SLR SYSTEM.

Site Topo Map: NONE AVAILABLE

-- GEOLOGICAL INFORMATION --

Geological Province: UNKNOWN

Local Geology: VOLCANIC ISLAND

Comments: NO GEODETIC SURVEY OF THIS SITE HAS BEEN CONDUCTED, NOR HAS THE PAD BEEN OCCUPIED.

-- MONUMENT INFORMATION --

Site Number: 821
Current Site Name: SOCORRO ISLAND
Location: SOCORRO, REVILLAGIGEDO ISLANDS, MEXICO
Number of Observing Monuments: 1
Surveyed into National Network? NO

Monument Number: 7881
Type of Monument: STANDARD NASA DISK
Monument Inscription: NONE
Systems Using Monument: MOBILE LASERS

Latitude: N 18 43' 44.93''
Longitude: W 110 57' 20.72''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: COAST & GEODETIC SURVEY, SATELLITE
TRIANGULATION DIVISION/01-DEC-67
Datum/Ellipsoid: UNKNOWN

Comments: THE PAD HAS BEEN CONSTRUCTED AT THIS SITE BUT NO SURVEY HAS
BEEN COMPLETED. SURVEY INFORMATION IS FROM DOPPLER STATION 038.

Differential Coordinates FROM Observing Monument 7881 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 821
Current Site Name: SOCORRO ISLAND
Location: SOCORRO, REVILLAGIGEDO ISLANDS, MEXICO

-- Site Sketch Not Available --

Figure 4-SOCORO. SOCORRO ISLAND Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 821
Current Site Name: SOCORRO ISLAND
Location: SOCORRO, REVILLAGIGEDO ISLANDS, MEXICO

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- SITE INFORMATION --

Site Number: 804

Current Site Name: SOURDOUGH

Other Site Name:

Location: SOURDOUGH, AK

Geographic Region: ALASKA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION.

Site Description: THE SITE IS LOCATED IN SOUTHERN MAINLAND ALASKA. THE ACTUAL SITE IS LOCATED AT AN ABANDONED GRAVEL BURROW PIT THAT RUNS ALONG THE RICHARDSON HIGHWAY, ABOUT TEN MILES NORTH OF THE COMMUNITY OF SOURDOUGH. THE SITE IS COMPATIBLE FOR FOR OCCUPATION BY MOBILE VLBI SYSTEMS.

Site Topo Map: MOUNT HAYES (A-4), ALASKA, AND MOUNT HAYES (A-3), ALASKA, 1:63,360 SCALE. U.S.G.S., RESTON, VA. AND U.S.G.S. QUAD (1:63,360) GULKANA C-3, ALASKA.

-- GEOLOGICAL INFORMATION --

Geological Province: ALASKA MAINLAND

Local Geology: QUATERNARY GLACIAL DEPOSITS

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 8C4
 Current Site Name: SOURDOUGH
 Location: SOURDOUGH, AK
 Number of Observing Monuments: 1
 Surveyed into National Network? NO

Monument Number: 7281
 Type of Monument: NGS MODIFIED CAP SET INSIDE A 24-INCH CAST
 IRON JUNCTION BOX
 Monument Inscription: NONE
 Systems Using Monument: MOBILE VLBI

Latitude: N 62 39' 50.0033''
 Longitude: W 145 29' 01.7744''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 744.599 meters
 Survey Source/Date Reported: NGS GPS RESULTS/01-JAN-86
 Datum/Ellipsoid: WGS 72

Comments: NONE

Differential Coordinates FROM Observing Monument 7281 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS GPS RESULTS, JANUARY 1986

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	BM 08	-12377.251	-6520.714	-7358.701
--	SOU 1	9.369	-53.889	-11.827
--	SOU 2	-51.496	-19.468	-28.832
--	SOU 3	22.157	30.004	17.218

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	SOU 1	-25.699	49.712	-0.029
--	SOU 2	-60.731	-13.139	-1.062
--	SOU 3	39.227	-12.167	-0.896

-- SITE SKETCH --

Site Number: 804
Current Site Name: SOURDOUGH
Location: SOURDOUGH, AK

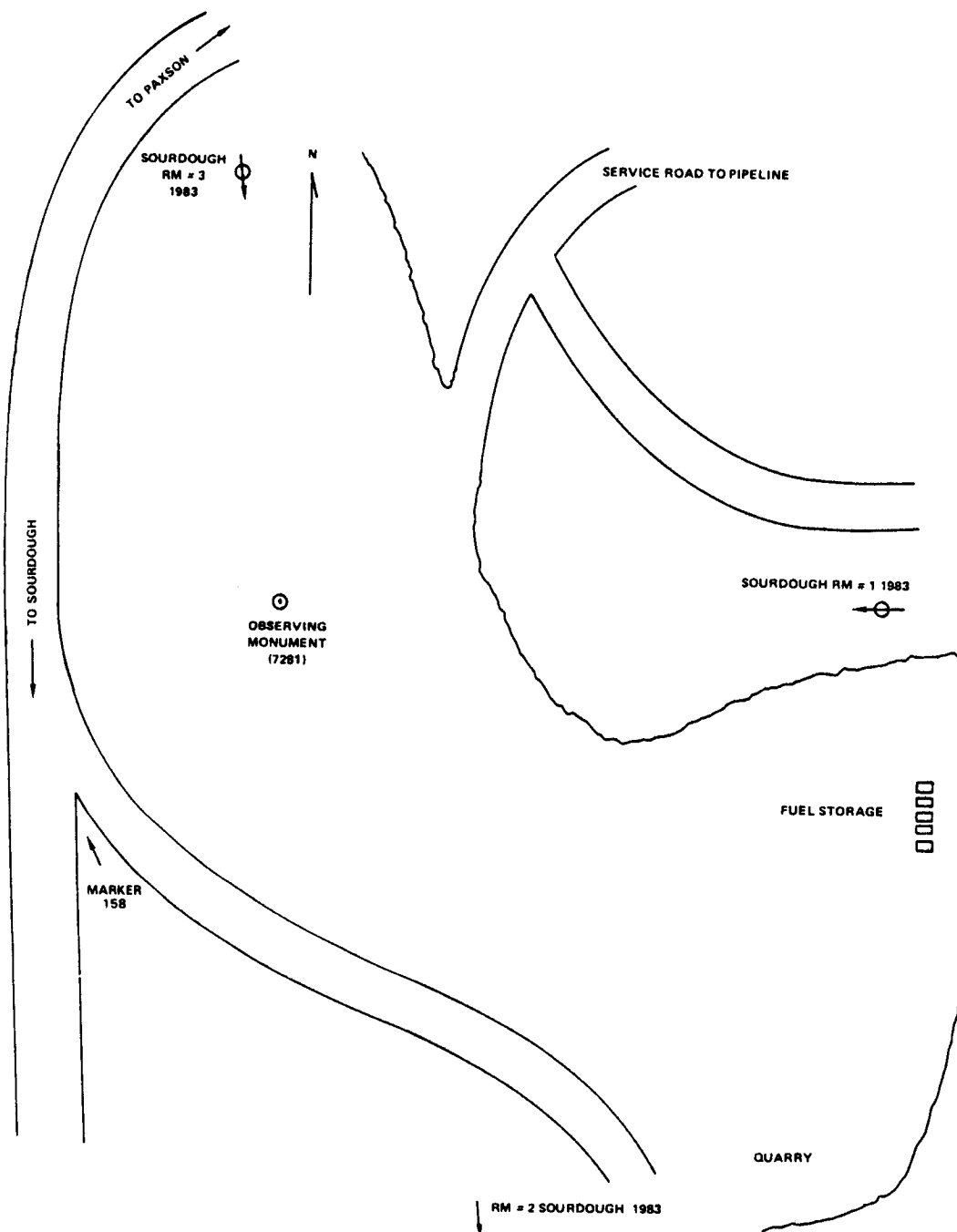


Figure 4-SRDOGH. SOURDOUGH Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 804
Current Site Name: SOURDOUGH
Location: SOURDOUGH, AK

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7281	MV-3	72815301	31-JUL-84	09-AUG-84	YES
7281	MV-3	72815302	05-AUG-85	13-AUG-85	YES
7281	MV-3	72815303	10-AUG-86	19-AUG-86	YES
7281	MV-2	72815204	11-AUG-87	13-AUG-87	NO

-- SITE INFORMATION --

Site Number: 131

Current Site Name: TIDBINBILLA

Other Site Name:

Location: TIDBINBILLA, AUSTRALIA

Geographic Region: AUSTRALIA

Tectonic Plate: AUSTRALIAN-INDIAN

-- Site Information Not Yet Available --

-- SITE INFORMATION --

Site Number: 9

Current Site Name: VANDENBERG

Other Site Name:

Location: VANDENBERG AIR FORCE BASE, CA

Geographic Region: CALIFORNIA

Tectonic Plate: PACIFIC

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, PLATE STABILITY, REGIONAL DEFORMATION, AND INTERCOMPARISON OF MEASUREMENT TECHNIQUES.

Site Description: THE ORIGINAL SITE WAS LOCATED ON A TELEMETRY RECEIVING SITE ON OAK MOUNTAIN AT VANDENBERG AIR FORCE BASE. TWO MONUMENTS WERE PROVIDED FOR JOINT OCCUPATIONS BY MOBILE VLBI AND MOBILE LASER SYSTEMS. THE PAD CONTAINING MONUMENT 7111 IS NOW ABANDONED DUE TO EXCESSIVE RADIO FREQUENCY INTERFERENCE. TWO NEW PADS HAVE BEEN COMPLETED ON THE SOUTH COAST OF THE AIR FORCE BASE NEAR THE BOAT HOUSE ON THE SANTA BARBARA CHANNEL.

Site Topo Map: LOMPOC HILLS, CALIFORNIA. N3430-W12022.5/7.5, 1959. STATE OF CALIF. DEPARTMENT OF WATER RESOURCES. AVAILABLE AT U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: TRANSVERSE RANGES

Local Geology: MIOCENE MARINE TERRACE DEPOSITS

Comments: AS OF 1983, MV-1 IS PERMANENTLY OCCUPYING THE BOAT HOUSE SITE ON THE SANTA BARBARA CHANNEL.

-- MONUMENT INFORMATION --

Site Number: 9
 Current Site Name: VANDENBERG
 Location: VANDENBERG AIR FORCE BASE, CA
 Number of Observing Monuments: 2
 Surveyed into National Network? NO

Monument Number: 7111
 Type of Monument: DMA DISK
 Monument Inscription: MOBLAS STA 7111 1981 (DET 1 GSS)
 Systems Using Monument: TLRS AND MOBILE VLBI

Latitude: N 34 33' 58.71742''
 Longitude: W 120 29' 56.14501''
 Elevation Above MSL (Geoid): 629.148 meters
 Height Above Ellipsoid: 596.994 meters
 Survey Source/Date Reported: DMA, DET. 1 GEODETIC SURVEY SQUADRON/28-JAN-87
 Datum/Ellipsoid: NAD 1927 (WCPT)/CLARKE 1866

Comments: THIS PAD WAS ABANDONED BECAUSE OF RADIO FREQUENCY INTERFERENCE PROBLEMS.

Differential Coordinates FROM Observing Monument 7111 TO
 Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	7111 RM-1	19.137	6.329	15.283
--	7111 RM-2	3.690	-16.798	-18.131
--	7111 RM-3	-20.979	13.570	0.377
7223	VLBI STA 7223	-9278.854	5310.196	-1277.219
7880	TLRS STA 7880	-9284.117	5304.203	-1288.507
7887	7887-1983	-52.140	18.408	-2.518

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	7111 RM-1	21.190	13.276	-3.817
--	7111 RM-2	-22.079	11.705	0.091
--	7111 RM-3	0.904	-24.963	-0.646
7887	7887-1983	-8.091	-54.266	7.302

-- MONUMENT INFORMATION --

(Continued)

Site Number: 9
Current Site Name: VANDENBERG
Location: VANDENBERG AIR FORCE BASE, CA

Monument Number: 7223
Type of Monument: DMA DISK
Monument Inscription: VLBI STA 7223 1983
Systems Using Monument: MV-1

Latitude: N 34 33' 21.922''
Longitude: W 120 36' 55.453''
Elevation Above MSL (Geoid): 23.694 meters
Height Above Ellipsoid: -8.456 meters
Survey Source/Date Reported: DMA, DET. 1 GEODETIC SURVEY SQUADRON/28-JAN-87
Datum/Ellipsoid: NAD 1927(WCPT)/CLARKE 1866

Comments: THIS IS THE NEW SITE ON SOUTH COAST OF VAFB.

Differential Coordinates FROM Observing Monument 7223 TO
Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	VLBI STA 7223 RM-1	23.103	-0.950	17.267
--	VLBI STA 7223 RM-2	-1.435	-17.087	-23.154
--	VLBI STA 7223 RM-3	-21.913	17.687	6.294
7111	MOBLAS STA 7111	9278.854	-5310.196	1277.219
7880	TLRS STA 7880	-5.263	-5.993	-11.288
7887	7887 GSFC	9226.714	-5291.788	1244.701

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	VLBI STA 7223 RM-1	20.417	20.378	0.778
--	VLBI STA 7223 RM-2	-27.826	7.459	-0.420
--	VLBI STA 7223 RM-3	7.480	-27.868	0.225
7880	TLRS STA 7880	-13.741	-1.489	0.053

-- MONUMENT INFORMATION --

(Continued)

Site Number: 9
Current Site Name: VANDENBERG
Location: VANDENBERG AIR FORCE BASE, CA

Monument Number: 7880
Type of Monument: DMA DISK
Monument Inscription: TLRS STA 7880
Systems Using Monument: TLRS

Latitude: N 34 33' 21.476''
Longitude: W 120 36' 55.511''
Elevation Above MSL (Geoid): 23.747 meters
Height Above Ellipsoid: -8.403 meters
Survey Source/Date Reported: DMA, DET. 1 GEODETIC SURVEY SQUADRON/28-JAN-87
Datum/Ellipsoid: NAD 1927(WCPT)/CLARKE 1866

Comments: THIS MONUMENT WAS DESTROYED INADVERTENTLY IN SEPTEMBER 1987.

Differential Coordinates FROM Observing Monument 7880 TO
Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	VLBI STA 7223 RM-1	28.366	5.043	28.555
--	VLBI STA 7223 RM-2	3.828	-11.094	-11.866
--	VLBI STA 7223 RM-3	-16.650	23.680	17.582
7111	MOBLAS STA 7111	9284.117	-5304.203	1288.507
7223	TLRS STA 7223	5.263	5.993	11.288
7887	7887 GSFC	9231.977	-5285.795	1285.989

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	VLBI STA 7223 RM-1	34.173	21.844	0.725
--	VLBI STA 7223 RM-2	-14.082	8.945	0.473
--	VLBI STA 7223 RM-3	21.231	-26.388	0.172
7223	TLRS STA 7223	13.741	1.489	-0.053

-- MONUMENT INFORMATION --

(Continued)

Site Number: 9
Current Site Name: VANDENBERG
Location: VANDENBERG AIR FORCE BASE, CA

Monument Number: 7887
Type of Monument: DMA DISK
Monument Inscription: 7887 GSFC-1983
Systems Using Monument: TLRS

Latitude: N 34 33' 58.45498''
Longitude: W 120 29' 58.27364''
Elevation Above MSL (Geoid): 636.450 meters
Height Above Ellipsoid: 604.296 meters
Survey Source/Date Reported: DMA, DET. 1 GEODETIC SURVEY SQUADRON/28-JAN-87
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS COLLOCATION SITE ON OAK MOUNTAIN IS NOW ABANDONED. THE
STATION WAS DESTROYED WHEN AN ANTENNA WAS BUILT OVER IT.

Differential Coordinates FROM Observing Monument 7887 TO
Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	----- Differential Coordinates ----- X	Y	Z
7111	MOBLAS 7111-1981	52.140	-18.408	2.518
7223	VLBI STA 7223	-9226.714	5291.788	-1274.701
7880	TLRS STA 7880	-9231.977	5285.795	-1285.989

Mon. Number	Monument Inscription	----- Differential Coordinates ----- North	East	Up
7111	MOBLAS 7111-1981	8.091	54.266	-7.302

ORIGINAL PAGE IS
OF POOR QUALITY

-- SITE SKETCH --

Site Number: 9
Current Site Name: VANDENBERG
Location: VANDENBERG AIR FORCE BASE, CA

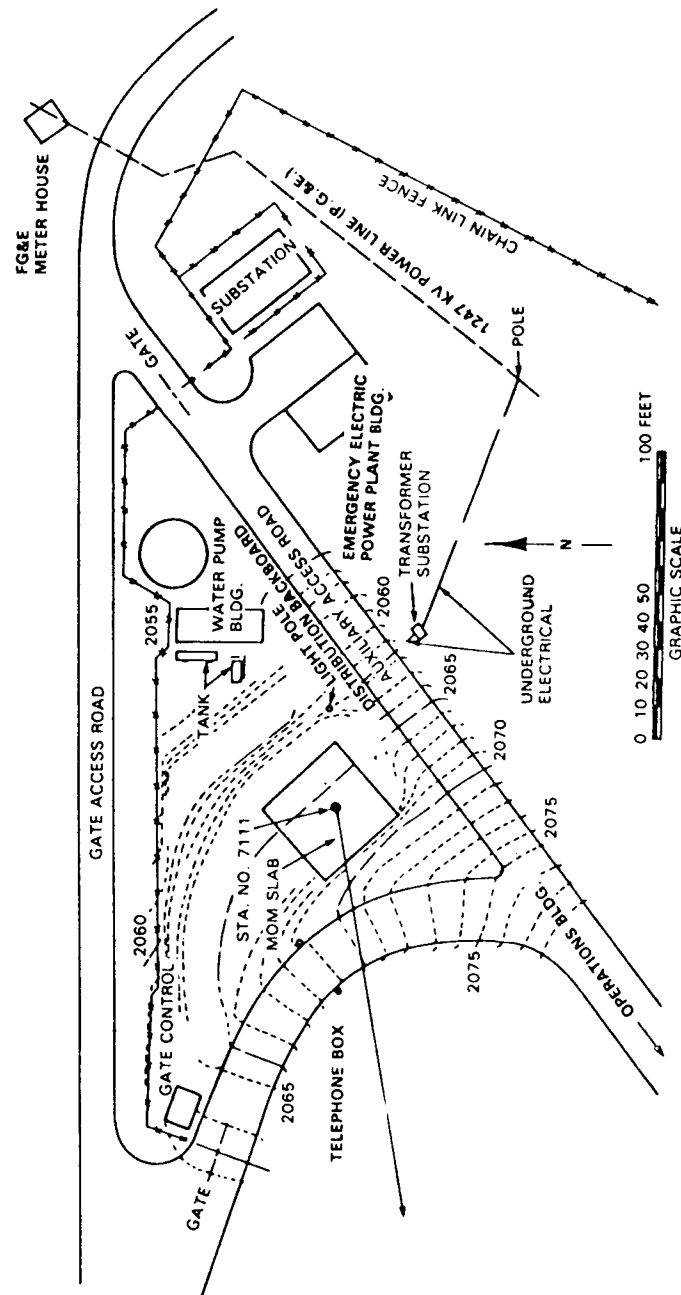


Figure 4-VANBRG-A. VANDENBERG Site Sketch (Old)

-- SITE SKETCH --

(Continued)

Site Number: 9
Current Site Name: VANDENBERG
Location: VANDENBERG AIR FORCE BASE, CA

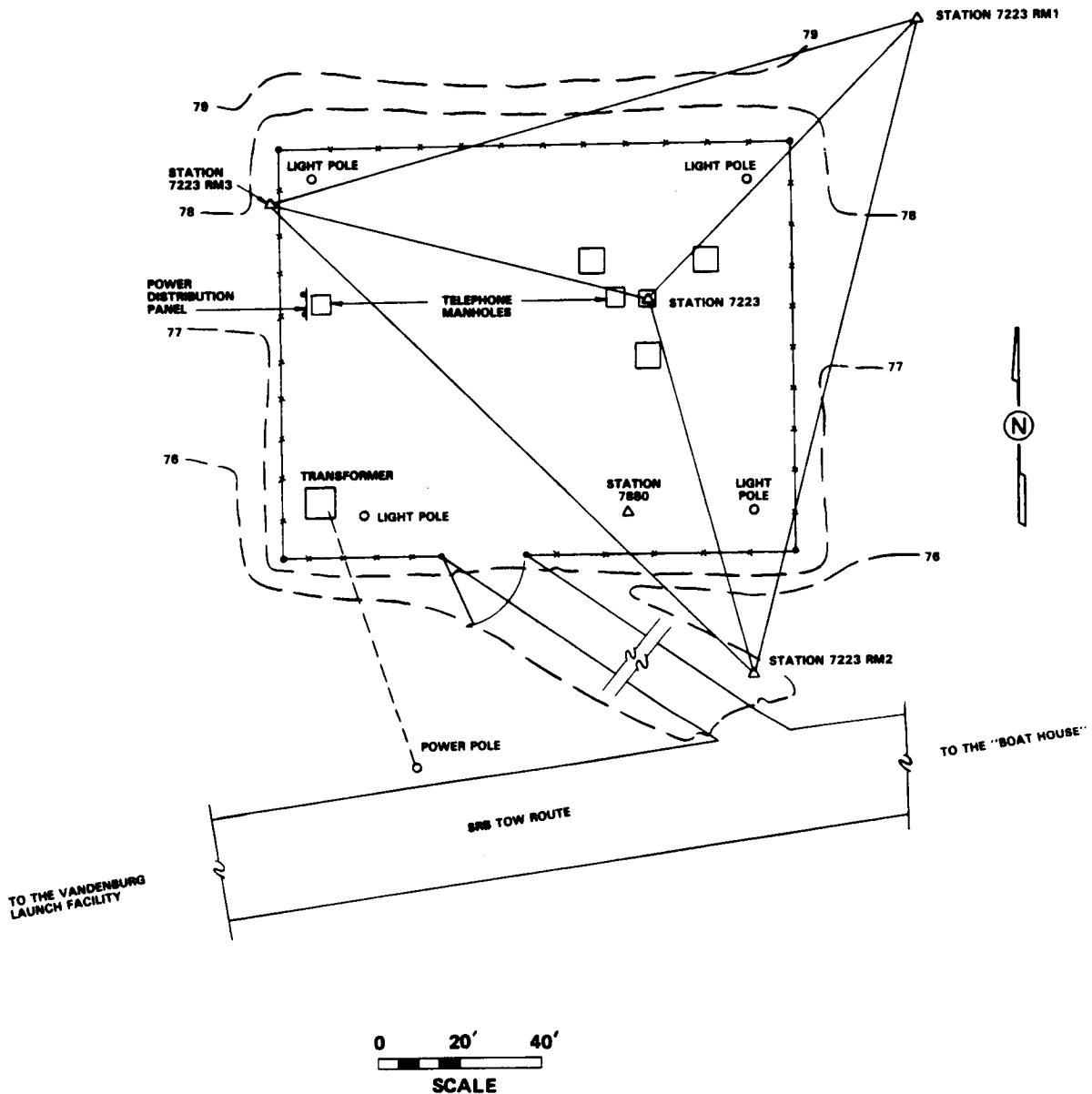


Figure 4-VANBRG-B. VANDENBERG Site Sketch (New)

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 9
 Current Site Name: VANDENBERG
 Location: VANDENBERG AIR FORCE BASE, CA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7111	TLRS-1	71111101	28-APR-82	25-MAY-82	YES
7887	TLRS-1	78871101	25-JAN-83	21-FEB-83	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7111	MV-2	71115201	01-SEP-81	02-SEP-81	YES
7111	MV-2	71115202	21-FEB-83	22-FEB-83	YES
7111	MV-2	71115202	22-FEB-83	23-FEB-83	YES
7111	MV-2	71115202	24-FEB-83	24-FEB-83	YES
7223	MV-1	72235101	23-AUG-83	24-AUG-83	YES
7223	MV-1	72235101	26-AUG-83	27-AUG-83	YES
7223	MV-1	72235101	28-AUG-83	29-AUG-83	YES
7223	MV-1	72235101	30-AUG-83	31-AUG-83	YES
7223	MV-1	72235101	31-OCT-83	01-NOV-83	YES
7223	MV-1	72235101	03-NOV-83	04-NOV-83	YES
7223	MV-1	72235101	08-NOV-83	09-NOV-83	YES
7223	MV-1	72235101	10-NOV-83	11-NOV-83	YES
7223	MV-1	72235101	12-NOV-83	12-NOV-83	YES
7223	MV-1	72235101	20-FEB-84	21-FEB-84	YES
7223	MV-1	72235101	23-FEB-84	24-FEB-84	YES
7223	MV-1	72235101	26-FEB-84	27-FEB-84	YES
7223	MV-1	72235101	29-FEB-84	01-FEB-84	YES
7223	MV-1	72235101	03-MAR-84	04-FEB-84	YES
7223	MV-1	72235101	09-APR-84	10-APR-84	YES
7223	MV-1	72235101	12-APR-84	13-APR-84	YES
7223	MV-1	72235101	14-JUL-84	16-JUL-84	YES
7223	MV-1	72235101	21-JUL-84	22-JUL-84	YES
7223	MV-1	72235101	23-JUL-84	25-JUL-84	YES
7223	MV-1	72235101	31-JUL-84	02-AUG-84	YES
7223	MV-1	72235101	07-AUG-84	09-AUG-84	YES
7223	MV-1	72235101	22-OCT-84	23-OCT-84	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 9
Current Site Name: VANDENBERG
Location: VANDENBERG AIR FORCE BASE, CA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7223	MV-1	72235101	25-OCT-84	26-OCT-84	YES
7223	MV-1	72235101	28-OCT-84	29-OCT-84	YES
7223	MV-1	72235101	31-OCT-84	01-NOV-84	YES
7223	MV-1	72235101	15-MAY-85	15-MAY-85	YES
7223	MV-1	72235101	06-JUL-85	06-JUL-85	YES
7223	MV-1	72235101	20-JUL-85	20-JUL-85	YES
7223	MV-1	72235101	27-JUL-85	27-JUL-85	YES
7223	MV-1	72235101	10-AUG-85	10-AUG-85	YES
7223	MV-1	72235101	30-SEP-85	30-SEP-85	YES
7223	MV-1	72235101	05-JAN-86	05-JAN-86	YES
7223	MV-1	72235101	07-APR-86	07-APR-86	YES
7223	MV-1	72235101	10-APR-86	10-APR-86	YES
7223	MV-1	72235101	13-APR-86	13-APR-86	YES
7223	MV-1	72235101	18-MAY-86	18-MAY-86	YES
7223	MV-1	72235101	21-MAY-86	21-MAY-86	YES
7223	MV-1	72235101	22-JUL-86	22-JUL-86	YES
7223	MV-1	72235101	26-JUL-86	26-JUL-86	YES
7223	MV-1	72235101	31-JUL-86	31-JUL-86	YES
7223	MV-1	72235101	02-AUG-86	02-AUG-86	YES
7223	MV-1	72235101	11-AUG-86	11-AUG-86	YES
7223	MV-1	72235101	18-AUG-86	18-OCT-86	YES
7223	MV-1	72235101	19-OCT-86	19-OCT-86	YES
7223	MV-1	72235101	22-OCT-86	22-OCT-86	YES
7223	MV-1	72235101	23-OCT-86	23-OCT-86	YES
7223	MV-1	72235101	26-OCT-86	26-OCT-86	YES
7223	MV-1	72235101	29-OCT-86	29-OCT-86	YES
7223	MV-1	72235101	01-NOV-86	01-NOV-86	YES
7223	MV-1	72235101	04-NOV-86	04-NOV-86	YES
7223	MV-1	72235101	07-DEC-86	07-DEC-86	YES
7223	MV-1	72235101	10-DEC-86	10-DEC-86	YES
7223	MV-1	72235101	13-DEC-86	13-DEC-86	YES
7223	MV-1	72235101	16-DEC-86	16-DEC-86	YES
7223	MV-1	72235101	28-JAN-87	28-JAN-87	NO
7223	MV-1	72235101	31-JAN-87	31-JAN-87	NO
7223	MV-1	72235101	03-FEB-87	03-FEB-87	NO

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 9
 Current Site Name: VANDENBERG
 Location: VANDENBERG AIR FORCE BASE, CA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7223	MV-1	72235101	06-FEB-87	06-FEB-87	NO
7223	MV-1	72235101	09-FEB-87	09-FEB-87	NO
7223	MV-1	72235101	22-MAR-87	22-MAR-87	NO
7223	MV-1	72235101	24-MAR-87	24-MAR-87	NO
7223	MV-1	72235101	25-MAR-87	25-MAR-87	NO
7223	MV-1	72235101	28-MAR-87	28-MAR-87	NO
7223	MV-1	72235101	10-MAY-87	10-MAY-87	NO
7223	MV-1	72235101	14-MAY-87	14-MAY-87	NO
7223	MV-1	72235101	17-MAY-87	17-MAY-87	NO
7223	MV-1	72235101	21-MAY-87	21-MAY-87	NO
7223	MV-1	72235101	18-JUL-87	18-JUL-87	NO
7223	MV-1	72235101	23-JUL-87	23-JUL-87	NO
7223	MV-1	72235101	01-AUG-87	01-AUG-87	NO
7223	MV-1	72235101	09-AUG-87	09-AUG-87	NO
7223	MV-1	72235101	15-OCT-87	15-OCT-87	NO
7223	MV-1	72235101	18-OCT-87	18-OCT-87	NO
7223	MV-1	72235101	19-OCT-87	19-OCT-87	NO
7223	MV-1	72235101	21-OCT-87	21-OCT-87	NO
7223	MV-1	72235101	24-OCT-87	24-OCT-87	NO
7223	MV-1	72235101	28-OCT-87	28-OCT-87	NO
7223	MV-1	72235101	05-DEC-87	05-DEC-87	NO
7223	MV-1	72235101	08-DEC-87	08-DEC-87	NO
7223	MV-1	72235101	11-DEC-87	11-DEC-87	NO
7223	MV-1	72235101	14-DEC-87	14-DEC-87	NO

-- SITE INFORMATION --

Site Number: 413

Current Site Name: VERNAL

Other Site Name:

Location: VERNAL, UT

Geographic Region: NORTH AMERICA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION AND INTERCOMPARISON OF MEASUREMENT TECHNIQUES.

Site Description: THE STATION IS LOCATED ON THE ABANDONED SITE OF THE UINTA SEISMOLOGICAL OBSERVATORY IN NORTHEAST UTAH. THE SITE WAS DESTROYED WHEN THE TEMPORARY OBSERVATORY LOCATION WAS RETURNED TO THE BUREAU OF LAND MANAGEMENT, THUS MAKING SEVERAL YEARS OF DATA USELESS. THE PROJECT HAS RECONSTRUCTED THE SITE. THE SITE IS NOW EQUIPPED WITH A UNIVERSAL PAD COMPATIBLE FOR OCCUPATION BY TLRS OR MV SYSTEMS.

Site Topo Map: VERNAL SOUTHEAST, UTAH. N4015-W10930/7.5, 1964.
U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: UINTA BASIN

Local Geology: DUCHESNE RIVER FORMATION. TERTIARY SEDIMENTS-SHALES, CONGLOMERATES, AND SANDSTONES. BEDROCK-MORRISON SANDSTONE (JURASSIC).

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 413
 Current Site Name: VERNAL
 Location: VERNAL, UT
 Number of Observing Monuments: 1
 Surveyed into National Network? NO

Monument Number: 7290
 Type of Monument: NASA BRASS DISK
 Monument Inscription: VERNAL NCMN 1985
 Systems Using Monument: TLRs AND MOBILE VLBI

Latitude: N 40 19' 37.1000''
 Longitude: W 109 34' 15.20000''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 1067.500 meters
 Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT 86-09-11/11-SEP-86
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS MONUMENT IS IN THE NEW UNIVERSAL PAD THAT REPLACES THE
 DESTROYED MONUMENT.

Differential Coordinates FROM Observing Monument 7290 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 86-09-11

Mon. Number	Monument Inscription	---- Differential Coordinates ---- X	Y	Z
--	VERNAL NCMN RM 1	43.430	37.912	61.519
--	VERNAL NCMN RM 2	60.625	-63.097	-48.026
--	VERNAL NCMN RM 3	-72.283	3.313	-27.431

Mon. Number	Monument Inscription	---- Differential Coordinates ---- North	East	Up
--	VERNAL NCMN RM 1	79.432	28.221	1.489
--	VERNAL NCMN RM 2	-61.945	78.259	-1.238
--	VERNAL NCMN RM 3	-34.562	-69.217	-1.673

-- MONUMENT INFORMATION --

(Continued)

Site Number: 413
Current Site Name: VERNAL
Location: VERNAL, UT

Monument Number: 7892
Type of Monument: NGS STATION DISK
Monument Inscription: VERNAL NCMN 1981
Systems Using Monument: TLRs AND MOBILE VLBI

Latitude: N 40 19' 36.59''
Longitude: W 109 34' 15.1''
Elevation Above MSL (Geoid): 1593.26 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: SOLUTION FROM THE FIRST TLRs OCCUPATION/
01-JUN-82
Datum/Ellipsoid: UNKNOWN

Comments: THIS MONUMENT WAS DESTROYED DURING THE OBSERVATORY TEAR DOWN.

Differential Coordinates FROM Observing Monument 7892 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 413
Current Site Name: VERNAL
Location: VERNAL, UT

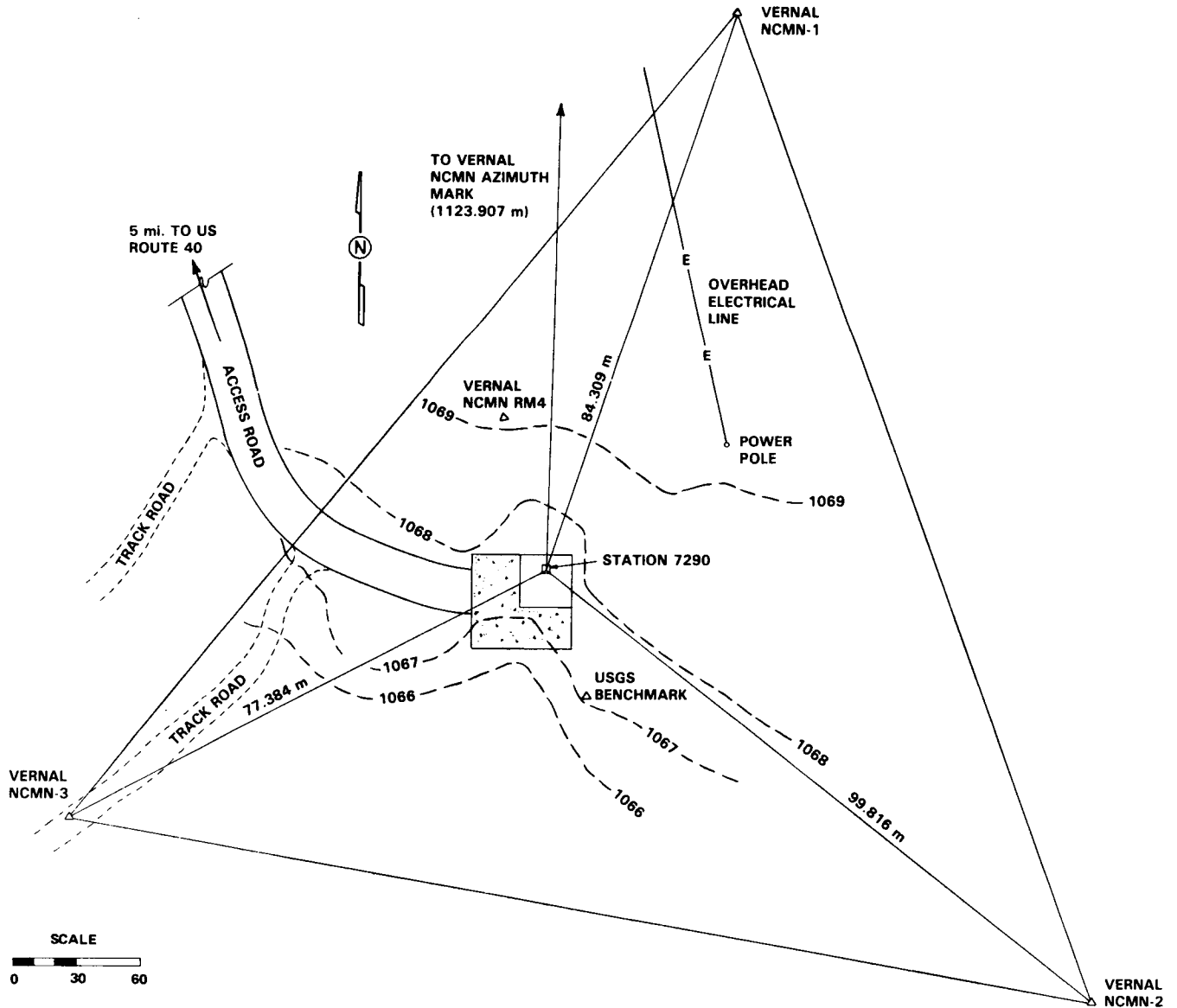


Figure 4-VERNAL. VERNAL Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 413
Current Site Name: VERNAL
Location: VERNAL, UT

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7892	TLRS-1	78921101	07-MAY-81	17-JUN-81	YES
7892	TLRS-1	78921102	31-MAY-82	21-JUL-82	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7290	MV-2	72905201	30-MAR-86	31-MAR-86	YES
7290	MV-3	72905302	06-MAY-87	07-MAY-87	NO

-- SITE INFORMATION --

Site Number: 41

Current Site Name: WESTFORD

Other Site Name: HAYSTACK

Location: HAYSTACK OBSERVATORY, WESTFORD, MA

Geographic Region: NORTH AMERICA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE INTERCOMPARISON OF MEASUREMENT TECHNIQUES AND VLBI DEVELOPMENT, AND THE DETERMINATION OF PLATE MOTION, STABILITY, AND POLAR MOTION/EARTH ROTATION.

Site Description: THE SITE IS LOCATED ON GOVERNMENT PROPERTY AT THE HAYSTACK OBSERVATORY NEAR WESTFORD, MASSACHUSETTS, APPROXIMATELY THIRTY MILES NORTHWEST OF BOSTON. TWO FIXED ANTENNAS, WESTFORD (18-METER NGS RADIO TELESCOPE) AND HAYSTACK (37-METER NEROC RADIO TELESCOPE), ARE USED FOR VLBI EXPERIMENTS. A STANDARD "GUEST" PAD LOCATED NEAR THE ANTENNAS IS COMPATIBLE FOR OCCUPATION BY ANY MOBILE MEASUREMENT SYSTEM LASER OR VLBI.

Site Topo Map: BOSTON, MA 1:250,000 SCALE

-- GEOLOGICAL INFORMATION --

Geological Province: THE NEW ENGLAND PROVINCE

Local Geology: NOT AVAILABLE

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 41
 Current Site Name: WESTFORD
 Location: HAYSTACK OBSERVATORY, WESTFORD, MA
 Number of Observing Monuments: 3
 Surveyed into National Network? YES

Monument Number: 7091
 Type of Monument: NGS STATION DISK
 Monument Inscription: HAYSTACK INTER COMP 1977
 Systems Using Monument: MOBLAS

Latitude: N 42 37' 21.79017''
 Longitude: W 71 29' 17.22134''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 117.414 meters
 Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT 87-01-06/06-JAN-87
 Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THIS MONUMENT IS ON THE "GUEST" PAD THAT WILL ACCOMMODATE ALL
 MOBILE LASER AND VLBI SYSTEMS.

Differential Coordinates FROM Observing Monument 7091 TO
 Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 87-01-06

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	HAYSTACK INTER COMP RM 1	23.903	5.443	-3.390
7205	----	-48.865	12.264	65.806
7209	NONE	-247.002	-851.720	-800.428

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	HAYSTACK INTER COMP RM 1	-4.139	24.394	-0.509
7205	----	66.803	-42.443	24.588

-- MONUMENT INFORMATION --

(Continued)

Site Number: 41
Current Site Name: WESTFORD
Location: HAYSTACK OBSERVATORY, WESTFORD, MA

Monument Number: 7205
Type of Monument: REFERENCE POINT ON RADIO TELESCOPE
Monument Inscription: NONE
Systems Using Monument: 37-METER RADIO TELESCOPE (NEROC)

Latitude: N 42 37' 23.95507''
Longitude: W 71 29' 19.08374''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 142.003 meters
Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT 87-01-06/06-JAN-87
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THE SYSTEM IS ALSO REFERENCED AS HAYSTACK.

Differential Coordinates FROM Observing Monument 7205 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 87-01-06

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	HAYSTACK INTER COMP RM 1	72.768	-6.821	-69.196
7091	HAYSTACK INTER COMP 1977	48.865	-12.264	-65.806
7209	----	-198.137	-863.984	-866.234

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	HAYSTACK INTER COMP RM 1	-70.941	66.837	-25.098
7091	HAYSTACK INTER COMP 1977	-66.803	42.443	-24.589

-- MONUMENT INFORMATION --

(Continued)

Site Number: 41
Current Site Name: WESTFORD
Location: HAYSTACK OBSERVATORY, WESTFORD, MA

Monument Number: 7209
Type of Monument: REFERENCE POINT ON RADIO TELESCOPE
Monument Inscription: NONE
Systems Using Monument: 18-METER RADIO TELESCOPE (NGS)

Latitude: N 42 36' 46.69930''
Longitude: W 71 29' 39.36170''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 112.088 meters
Survey Source/Date Reported: NGS HAVAGO ADJUSTMENT 87-01-06/06-JAN-87
Datum/Ellipsoid: NAD 1927/CLARKE 1866

Comments: THE SYSTEM IS ALSO REFERENCED AS WESTFORD.

Differential Coordinates FROM Observing Monument 7209 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS HAVAGO ADJUSTMENT 87-01-06

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	HAYSTACK INTER COMP RM 1	270.905	857.163	797.038
7091	HAYSTACK INTER COMP 1977	247.002	851.720	800.428
7205	----	198.137	863.984	866.234

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 41
Current Site Name: WESTFORD
Location: HAYSTACK OBSERVATORY, WESTFORD, MA

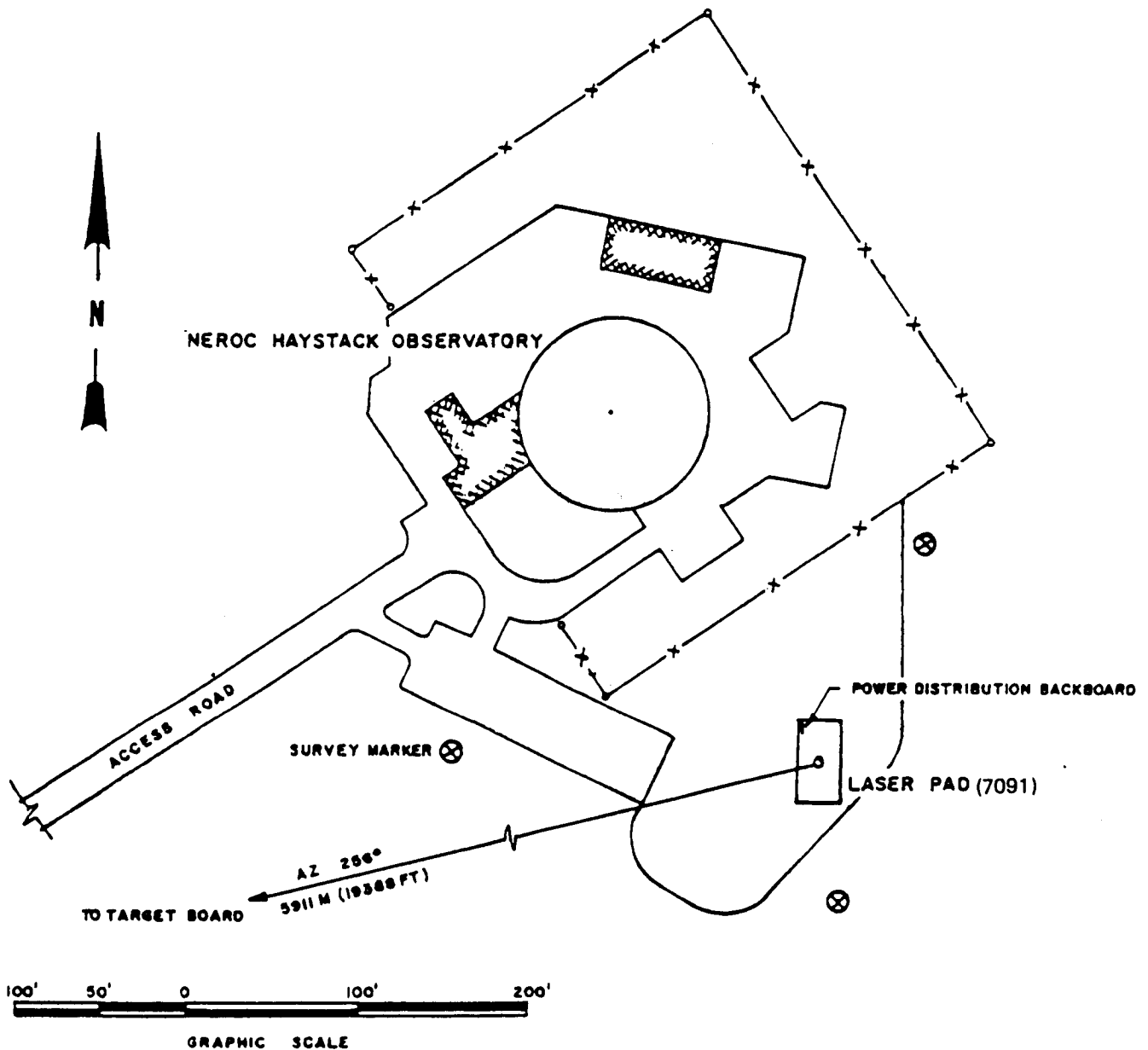


Figure 4-WSTFRD-A. WESTFORD Site Sketch (View 1)

-- SITE SKETCH --

(Continued)

Site Number: 41

Current Site Name: WESTFORD

Location: HAYSTACK OBSERVATORY, WESTFORD, MA

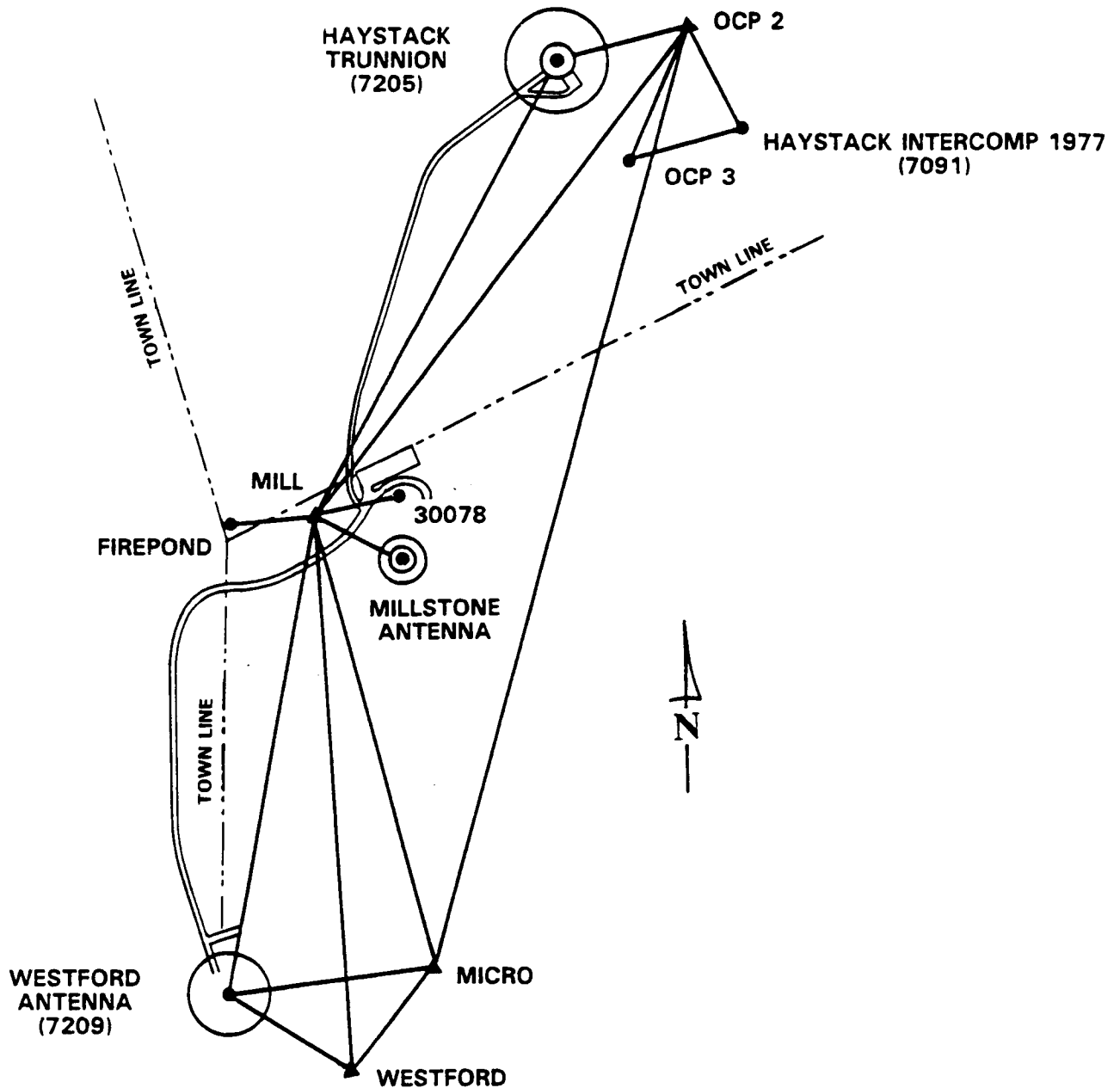


Figure 4-WSTFRD-B. WESTFORD Site Sketch (View 2)

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 41
 Current Site Name: WESTFORD
 Location: HAYSTACK OBSERVATORY, WESTFORD, MA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7091	MOBLAS-3	70910301	05-DEC-77	31-MAR-78	YES
7091	MOBLAS-7	70910702	10-JUN-79	14-NOV-80	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7205	HAYSTACK	72057401	09-SEP-76	09-SEP-76	YES
7205	HAYSTACK	72057401	29-SEP-76	29-SEP-76	YES
7205	HAYSTACK	72057401	04-OCT-76	04-OCT-76	YES
7205	HAYSTACK	72057401	09-OCT-76	09-OCT-76	YES
7205	HAYSTACK	72057401	11-OCT-76	11-OCT-76	YES
7205	HAYSTACK	72057401	14-OCT-76	14-OCT-76	YES
7205	HAYSTACK	72057401	13-DEC-76	13-DEC-76	YES
7205	HAYSTACK	72057401	15-DEC-76	15-DEC-76	YES
7205	HAYSTACK	72057401	27-MAR-77	27-MAR-77	YES
7205	HAYSTACK	72057401	26-JUN-77	26-JUN-77	YES
7205	HAYSTACK	72057401	24-SEP-77	24-SEP-77	YES
7205	HAYSTACK	72057401	13-DEC-77	13-DEC-77	YES
7205	HAYSTACK	72057401	13-JAN-78	13-JAN-78	YES
7205	HAYSTACK	72057401	24-FEB-78	24-FEB-78	YES
7205	HAYSTACK	72057401	17-MAY-78	17-MAY-78	YES
7205	HAYSTACK	72057401	09-APR-79	09-APR-79	YES
7205	HAYSTACK	72057401	03-AUG-79	03-AUG-79	YES
7205	HAYSTACK	72057401	25-NOV-79	25-NOV-79	YES
7205	HAYSTACK	72057401	11-APR-80	11-APR-80	YES
7205	HAYSTACK	72057401	26-JUL-80	26-JUL-80	YES
7205	HAYSTACK	72057401	27-JUL-80	27-JUL-80	YES
7205	HAYSTACK	72057401	26-SEP-80	26-SEP-80	YES
7205	HAYSTACK	72057401	27-SEP-80	27-SEP-80	YES
7205	HAYSTACK	72057401	28-SEP-80	28-SEP-80	YES
7205	HAYSTACK	72057401	29-SEP-80	29-SEP-80	YES
7205	HAYSTACK	72057401	30-SEP-80	30-SEP-80	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 41
 Current Site Name: WESTFORD
 Location: HAYSTACK OBSERVATORY, WESTFORD, MA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7205	HAYSTACK	72057401	01-OCT-80	01-OCT-80	YES
7205	HAYSTACK	72057401	02-OCT-80	02-OCT-80	YES
7205	HAYSTACK	72057401	16-OCT-80	16-OCT-80	YES
7205	HAYSTACK	72057401	17-OCT-80	17-OCT-80	YES
7205	HAYSTACK	72057401	18-OCT-80	18-OCT-80	YES
7205	HAYSTACK	72057401	19-OCT-80	19-OCT-80	YES
7205	HAYSTACK	72057401	20-OCT-80	20-OCT-80	YES
7205	HAYSTACK	72057401	21-OCT-80	21-OCT-80	YES
7205	HAYSTACK	72057401	22-OCT-80	22-OCT-80	YES
7205	HAYSTACK	72057401	03-NOV-80	03-NOV-80	YES
7205	HAYSTACK	72057401	01-DEC-80	01-DEC-80	YES
7205	HAYSTACK	72057401	19-DEC-80	19-DEC-80	YES
7205	HAYSTACK	72057401	07-JAN-81	07-JAN-81	YES
7205	HAYSTACK	72057401	22-JAN-81	22-JAN-81	YES
7205	HAYSTACK	72057401	12-FEB-81	12-FEB-81	YES
7205	HAYSTACK	72057401	27-FEB-81	27-FEB-81	YES
7205	HAYSTACK	72057401	16-MAR-81	16-MAR-81	YES
7205	HAYSTACK	72057401	13-MAY-81	13-MAY-81	YES
7205	HAYSTACK	72057401	16-JUN-81	16-JUN-81	YES
7205	HAYSTACK	72057401	17-JUN-81	17-JUN-81	YES
7205	HAYSTACK	72057401	18-NOV-81	18-NOV-81	YES
7205	HAYSTACK	72057401	19-NOV-81	19-NOV-81	YES
7205	HAYSTACK	72057401	18-JUN-82	18-JUN-82	YES
7205	HAYSTACK	72057401	19-JUN-82	19-JUN-82	YES
7205	HAYSTACK	72057401	20-JUN-82	20-JUN-82	YES
7205	HAYSTACK	72057401	05-MAY-83	05-MAY-83	YES
7205	HAYSTACK	72057401	23-SEP-83	23-SEP-83	YES
7205	HAYSTACK	72057401	28-OCT-83	28-OCT-83	YES
7205	HAYSTACK	72057401	17-NOV-83	17-NOV-83	YES
7205	HAYSTACK	72057401	22-DEC-83	22-DEC-83	YES
7205	HAYSTACK	72057401	24-FEB-84	25-FEB-84	YES
7205	HAYSTACK	72057401	19-APR-84	20-APR-84	YES
7205	HAYSTACK	72057401	19-MAY-84	20-MAY-84	YES
7205	HAYSTACK	72057401	30-AUG-84	31-AUG-84	YES
7205	HAYSTACK	72057401	02-SEP-84	03-SEP-84	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 41
Current Site Name: WESTFORD
Location: HAYSTACK OBSERVATORY, WESTFORD, MA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7205	HAYSTACK	72057401	24-JAN-85	24-JAN-85	YES
7205	HAYSTACK	72057401	05-MAR-85	05-MAR-85	YES
7205	HAYSTACK	72057401	23-APR-85	23-APR-85	YES
7205	HAYSTACK	72057401	29-JUN-87	29-JUN-87	NO
7205	HAYSTACK	72057401	30-JUN-87	30-JUN-87	NO
7205	HAYSTACK	72057401	01-DEC-87	01-DEC-87	NO
7209	WESTFORD	72097301	13-MAY-81	13-MAY-81	YES
7209	WESTFORD	72097301	16-JUN-81	16-JUN-81	YES
7209	WESTFORD	72097301	17-JUN-81	17-JUN-81	YES
7209	WESTFORD	72097301	24-JUN-81	24-JUN-81	YES
7209	WESTFORD	72097301	01-JUL-81	01-JUL-81	YES
7209	WESTFORD	72097301	08-JUL-81	08-JUL-81	YES
7209	WESTFORD	72097301	15-JUL-81	15-JUL-81	YES
7209	WESTFORD	72097301	22-JUL-81	22-JUL-81	YES
7209	WESTFORD	72097301	29-JUL-81	29-JUL-81	YES
7209	WESTFORD	72097301	05-AUG-81	05-AUG-81	YES
7209	WESTFORD	72097301	26-AUG-81	26-AUG-81	YES
7209	WESTFORD	72097301	02-SEP-81	02-SEP-81	YES
7209	WESTFORD	72097301	09-SEP-81	09-SEP-81	YES
7209	WESTFORD	72097301	16-SEP-81	16-SEP-81	YES
7209	WESTFORD	72097301	23-SEP-81	23-SEP-81	YES
7209	WESTFORD	72097301	30-SEP-81	30-SEP-81	YES
7209	WESTFORD	72097301	15-OCT-81	15-OCT-81	YES
7209	WESTFORD	72097301	21-OCT-81	21-OCT-81	YES
7209	WESTFORD	72097301	28-OCT-81	28-OCT-81	YES
7209	WESTFORD	72097301	04-NOV-81	04-NOV-81	YES
7209	WESTFORD	72097301	10-NOV-81	10-NOV-81	YES
7209	WESTFORD	72097301	18-NOV-81	18-NOV-81	YES
7209	WESTFORD	72097301	19-NOV-81	19-NOV-81	YES
7209	WESTFORD	72097301	24-NOV-81	24-NOV-81	YES
7209	WESTFORD	72097301	02-DEC-81	02-DEC-81	YES
7209	WESTFORD	72097301	16-DEC-81	16-DEC-81	YES
7209	WESTFORD	72097301	22-DEC-81	22-DEC-81	YES
7209	WESTFORD	72097301	06-JAN-82	06-JAN-82	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 41
Current Site Name: WESTFORD
Location: HAYSTACK OBSERVATORY, WESTFORD, MA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7209	WESTFORD	72097301	13-JAN-82	13-JAN-82	YES
7209	WESTFORD	72097301	20-JAN-82	20-JAN-82	YES
7209	WESTFORD	72097301	27-JAN-82	27-JAN-82	YES
7209	WESTFORD	72097301	01-FEB-82	01-FEB-82	YES
7209	WESTFORD	72097301	10-FEB-82	10-FEB-82	YES
7209	WESTFORD	72097301	17-FEB-82	17-FEB-82	YES
7209	WESTFORD	72097301	24-FEB-82	24-FEB-82	YES
7209	WESTFORD	72097301	03-MAR-82	03-MAR-82	YES
7209	WESTFORD	72097301	10-MAR-82	10-MAR-82	YES
7209	WESTFORD	72097301	24-MAR-82	24-MAR-82	YES
7209	WESTFORD	72097301	29-MAR-82	29-MAR-82	YES
7209	WESTFORD	72097301	07-APR-82	07-APR-82	YES
7209	WESTFORD	72097301	13-APR-82	13-APR-82	YES
7209	WESTFORD	72097301	26-APR-82	26-APR-82	YES
7209	WESTFORD	72097301	03-MAY-82	03-MAY-82	YES
7209	WESTFORD	72097301	10-MAY-82	10-MAY-82	YES
7209	WESTFORD	72097301	17-MAY-82	17-MAY-82	YES
7209	WESTFORD	72097301	02-JUN-82	02-JUN-82	YES
7209	WESTFORD	72097301	07-JUN-82	07-JUN-82	YES
7209	WESTFORD	72097301	16-JUN-82	16-JUN-82	YES
7209	WESTFORD	72097301	17-JUN-82	17-JUN-82	YES
7209	WESTFORD	72097301	18-JUN-82	18-JUN-82	YES
7209	WESTFORD	72097301	19-JUN-82	19-JUN-82	YES
7209	WESTFORD	72097301	20-JUN-82	20-JUN-82	YES
7209	WESTFORD	72097301	21-JUN-82	21-JUN-82	YES
7209	WESTFORD	72097301	28-JUN-82	28-JUN-82	YES
7209	WESTFORD	72097301	12-JUL-82	12-JUL-82	YES
7209	WESTFORD	72097301	19-JUL-82	19-JUL-82	YES
7209	WESTFORD	72097301	26-JUL-82	26-JUL-82	YES
7209	WESTFORD	72097301	04-AUG-82	04-AUG-82	YES
7209	WESTFORD	72097301	09-AUG-82	09-AUG-82	YES
7209	WESTFORD	72097301	16-AUG-82	16-AUG-82	YES
7209	WESTFORD	72097301	23-AUG-82	23-AUG-82	YES
7209	WESTFORD	72097301	30-AUG-82	30-AUG-82	YES
7209	WESTFORD	72097301	07-SEP-82	07-SEP-82	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 41
 Current Site Name: WESTFORD
 Location: HAYSTACK OBSERVATORY, WESTFORD, MA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7209	WESTFORD	72097301	13-SEP-82	13-SEP-82	YES
7209	WESTFORD	72097301	20-SEP-82	20-SEP-82	YES
7209	WESTFORD	72097301	27-SEP-82	27-SEP-82	YES
7209	WESTFORD	72097301	04-OCT-82	04-OCT-82	YES
7209	WESTFORD	72097301	13-OCT-82	13-OCT-82	YES
7209	WESTFORD	72097301	18-OCT-82	18-OCT-82	YES
7209	WESTFORD	72097301	25-OCT-82	25-OCT-82	YES
7209	WESTFORD	72097301	01-NOV-82	01-NOV-82	YES
7209	WESTFORD	72097301	08-NOV-82	08-NOV-82	YES
7209	WESTFORD	72097301	15-NOV-82	15-NOV-82	YES
7209	WESTFORD	72097301	22-NOV-82	22-NOV-82	YES
7209	WESTFORD	72097301	29-NOV-82	29-NOV-82	YES
7209	WESTFORD	72097301	06-DEC-82	06-DEC-82	YES
7209	WESTFORD	72097301	15-DEC-82	15-DEC-82	YES
7209	WESTFORD	72097301	16-DEC-82	16-DEC-82	YES
7209	WESTFORD	72097301	20-DEC-82	20-DEC-82	YES
7209	WESTFORD	72097301	27-DEC-82	27-DEC-82	YES
7209	WESTFORD	72097301	03-JAN-83	03-JAN-83	YES
7209	WESTFORD	72097301	10-JAN-83	10-JAN-83	YES
7209	WESTFORD	72097301	17-JAN-83	17-JAN-83	YES
7209	WESTFORD	72097301	24-JAN-83	24-JAN-83	YES
7209	WESTFORD	72097301	31-JAN-83	31-JAN-83	YES
7209	WESTFORD	72097301	07-FEB-83	07-FEB-83	YES
7209	WESTFORD	72097301	14-FEB-83	14-FEB-83	YES
7209	WESTFORD	72097301	28-FEB-83	28-FEB-83	YES
7209	WESTFORD	72097301	07-MAR-83	07-MAR-83	YES
7209	WESTFORD	72097301	14-MAR-83	14-MAR-83	YES
7209	WESTFORD	72097301	21-MAR-83	21-MAR-83	YES
7209	WESTFORD	72097301	28-MAR-83	28-MAR-83	YES
7209	WESTFORD	72097301	04-APR-83	04-APR-83	YES
7209	WESTFORD	72097301	11-APR-83	11-APR-83	YES
7209	WESTFORD	72097301	18-APR-83	18-APR-83	YES
7209	WESTFORD	72097301	25-APR-83	25-APR-83	YES
7209	WESTFORD	72097301	02-MAY-83	02-MAY-83	YES
7209	WESTFORD	72097301	05-MAY-83	05-MAY-83	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 41
 Current Site Name: WESTFORD
 Location: HAYSTACK OBSERVATORY, WESTFORD, MA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7209	WESTFORD	72097301	09-MAY-83	09-MAY-83	YES
7209	WESTFORD	72097301	16-MAY-83	16-MAY-83	YES
7209	WESTFORD	72097301	23-MAY-83	23-MAY-83	YES
7209	WESTFORD	72097301	31-MAY-83	31-MAY-83	YES
7209	WESTFORD	72097301	06-JUN-83	06-JUN-83	YES
7209	WESTFORD	72097301	07-JUN-83	07-JUN-83	YES
7209	WESTFORD	72097301	08-JUN-83	08-JUN-83	YES
7209	WESTFORD	72097301	09-JUN-83	09-JUN-83	YES
7209	WESTFORD	72097301	13-JUN-83	13-JUN-83	YES
7209	WESTFORD	72097301	20-JUN-83	20-JUN-83	YES
7209	WESTFORD	72097301	28-JUN-83	28-JUN-83	YES
7209	WESTFORD	72097301	05-JUL-83	05-JUL-83	YES
7209	WESTFORD	72097301	11-JUL-83	11-JUL-83	YES
7209	WESTFORD	72097301	25-JUL-83	25-JUL-83	YES
7209	WESTFORD	72097301	01-AUG-83	01-AUG-83	YES
7209	WESTFORD	72097301	08-AUG-83	08-AUG-83	YES
7209	WESTFORD	72097301	15-AUG-83	15-AUG-83	YES
7209	WESTFORD	72097301	22-AUG-83	22-AUG-83	YES
7209	WESTFORD	72097301	29-AUG-83	29-AUG-83	YES
7209	WESTFORD	72097301	30-AUG-83	30-AUG-83	YES
7209	WESTFORD	72097301	02-SEP-83	02-SEP-83	YES
7209	WESTFORD	72097301	07-SEP-83	07-SEP-83	YES
7209	WESTFORD	72097301	12-SEP-83	12-SEP-83	YES
7209	WESTFORD	72097301	17-SEP-83	17-SEP-83	YES
7209	WESTFORD	72097301	22-SEP-83	22-SEP-83	YES
7209	WESTFORD	72097301	27-SEP-83	27-SEP-83	YES
7209	WESTFORD	72097301	02-OCT-83	02-OCT-83	YES
7209	WESTFORD	72097301	07-OCT-83	07-OCT-83	YES
7209	WESTFORD	72097301	12-OCT-83	12-OCT-83	YES
7209	WESTFORD	72097301	17-OCT-83	17-OCT-83	YES
7209	WESTFORD	72097301	22-OCT-83	22-OCT-83	YES
7209	WESTFORD	72097301	27-OCT-83	27-OCT-83	YES
7209	WESTFORD	72097301	01-NOV-83	01-NOV-83	YES
7209	WESTFORD	72097301	06-NOV-83	06-NOV-83	YES
7209	WESTFORD	72097301	11-NOV-83	11-NOV-83	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 41
 Current Site Name: WESTFORD
 Location: HAYSTACK OBSERVATORY, WESTFORD, MA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7209	WESTFORD	72097301	16-NOV-83	16-NOV-83	YES
7209	WESTFORD	72097301	21-NOV-83	21-NOV-83	YES
7209	WESTFORD	72097301	26-NOV-83	26-NOV-83	YES
7209	WESTFORD	72097301	01-DEC-83	01-DEC-83	YES
7209	WESTFORD	72097301	06-DEC-83	06-DEC-83	YES
7209	WESTFORD	72097301	11-DEC-83	11-DEC-83	YES
7209	WESTFORD	72097301	16-DEC-83	16-DEC-83	YES
7209	WESTFORD	72097301	21-DEC-83	21-DEC-83	YES
7209	WESTFORD	72097301	26-DEC-83	26-DEC-83	YES
7209	WESTFORD	72097301	31-DEC-83	31-DEC-83	YES
7209	WESTFORD	72097301	04-JAN-84	05-JAN-84	YES
7209	WESTFORD	72097301	09-JAN-84	10-JAN-84	YES
7209	WESTFORD	72097301	14-JAN-84	15-JAN-84	YES
7209	WESTFORD	72097301	24-JAN-84	24-JAN-84	YES
7209	WESTFORD	72097301	25-JAN-84	26-JAN-84	YES
7209	WESTFORD	72097301	29-JAN-84	30-JAN-84	YES
7209	WESTFORD	72097301	03-FEB-84	04-FEB-84	YES
7209	WESTFORD	72097301	13-FEB-84	14-FEB-84	YES
7209	WESTFORD	72097301	18-FEB-84	19-FEB-84	YES
7209	WESTFORD	72097301	23-FEB-84	23-FEB-84	YES
7209	WESTFORD	72097301	28-FEB-84	28-FEB-84	YES
7209	WESTFORD	72097301	09-MAR-84	10-MAR-84	YES
7209	WESTFORD	72097301	14-MAR-84	14-MAR-84	YES
7209	WESTFORD	72097301	15-MAR-84	16-MAR-84	YES
7209	WESTFORD	72097301	19-MAR-84	20-MAR-84	YES
7209	WESTFORD	72097301	25-MAR-84	26-MAR-84	YES
7209	WESTFORD	72097301	30-MAR-84	31-MAR-84	YES
7209	WESTFORD	72097301	23-APR-84	24-APR-84	YES
7209	WESTFORD	72097301	26-APR-84	27-APR-84	YES
7209	WESTFORD	72097301	28-APR-84	29-APR-84	YES
7209	WESTFORD	72097301	05-MAY-84	06-MAY-84	YES
7209	WESTFORD	72097301	08-MAY-84	09-MAY-84	YES
7209	WESTFORD	72097301	13-MAY-84	14-MAY-84	YES
7209	WESTFORD	72097301	18-MAY-84	18-MAY-84	YES
7209	WESTFORD	72097301	23-MAY-84	24-MAY-84	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 41
 Current Site Name: WESTFORD
 Location: HAYSTACK OBSERVATORY, WESTFORD, MA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7209	WESTFORD	72097301	28-MAY-84	29-MAY-84	YES
7209	WESTFORD	72097301	02-JUN-84	03-JUN-84	YES
7209	WESTFORD	72097301	07-JUN-84	08-JUN-84	YES
7209	WESTFORD	72097301	12-JUN-84	13-JUN-84	YES
7209	WESTFORD	72097301	17-JUN-84	18-JUN-84	YES
7209	WESTFORD	72097301	22-JUN-84	23-JUN-84	YES
7209	WESTFORD	72097301	27-JUN-84	28-JUN-84	YES
7209	WESTFORD	72097301	30-JUN-84	01-JUL-84	YES
7209	WESTFORD	72097301	02-JUL-84	03-JUL-84	YES
7209	WESTFORD	72097301	12-JUL-84	13-JUL-84	YES
7209	WESTFORD	72097301	17-JUL-84	18-JUL-84	YES
7209	WESTFORD	72097301	27-JUL-84	27-JUL-84	YES
7209	WESTFORD	72097301	03-JAN-85	03-JAN-85	YES
7209	WESTFORD	72097301	08-JAN-85	08-JAN-85	YES
7209	WESTFORD	72097301	13-JAN-85	13-JAN-85	YES
7209	WESTFORD	72097301	18-JAN-85	18-JAN-85	YES
7209	WESTFORD	72097301	23-JAN-85	23-JAN-85	YES
7209	WESTFORD	72097301	28-JAN-85	28-JAN-85	YES
7209	WESTFORD	72097301	02-FEB-85	02-FEB-85	YES
7209	WESTFORD	72097301	07-FEB-85	07-FEB-85	YES
7209	WESTFORD	72097301	12-FEB-85	12-FEB-85	YES
7209	WESTFORD	72097301	17-FEB-85	17-FEB-85	YES
7209	WESTFORD	72097301	22-FEB-85	22-FEB-85	YES
7209	WESTFORD	72097301	27-FEB-85	27-FEB-85	YES
7209	WESTFORD	72097301	04-MAR-85	04-MAR-85	YES
7209	WESTFORD	72097301	14-MAR-85	14-MAR-85	YES
7209	WESTFORD	72097301	19-MAR-85	19-MAR-85	YES
7209	WESTFORD	72097301	24-MAR-85	24-MAR-85	YES
7209	WESTFORD	72097301	29-MAR-85	29-MAR-85	YES
7209	WESTFORD	72097301	03-APR-85	03-APR-85	YES
7209	WESTFORD	72097301	08-APR-85	08-APR-85	YES
7209	WESTFORD	72097301	13-APR-85	13-APR-85	YES
7209	WESTFORD	72097301	18-APR-85	18-APR-85	YES
7209	WESTFORD	72097301	23-APR-85	23-APR-85	YES
7209	WESTFORD	72097301	28-APR-85	28-APR-85	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 41
Current Site Name: WESTFORD
Location: HAYSTACK OBSERVATORY, WESTFORD, MA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7209	WESTFORD	72097301	03-MAY-85	03-MAY-85	YES
7209	WESTFORD	72097301	07-MAY-85	07-MAY-85	YES
7209	WESTFORD	72097301	08-MAY-85	08-MAY-85	YES
7209	WESTFORD	72097301	09-MAY-85	09-MAY-85	YES
7209	WESTFORD	72097301	13-MAY-85	13-MAY-85	YES
7209	WESTFORD	72097301	18-MAY-85	18-MAY-85	YES
7209	WESTFORD	72097301	23-MAY-85	23-MAY-85	YES
7209	WESTFORD	72097301	28-MAY-85	28-MAY-85	YES
7209	WESTFORD	72097301	02-JUN-85	02-JUN-85	YES
7209	WESTFORD	72097301	07-JUN-85	07-JUN-85	YES
7209	WESTFORD	72097301	12-JUN-85	12-JUN-85	YES
7209	WESTFORD	72097301	17-JUN-85	17-JUN-85	YES
7209	WESTFORD	72097301	18-JUN-85	18-JUN-85	YES
7209	WESTFORD	72097301	19-JUN-85	19-JUN-85	YES
7209	WESTFORD	72097301	22-JUN-85	22-JUN-85	YES
7209	WESTFORD	72097301	27-JUN-85	27-JUN-85	YES
7209	WESTFORD	72097301	02-JUL-85	02-JUL-85	YES
7209	WESTFORD	72097301	07-JUL-85	07-JUL-85	YES
7209	WESTFORD	72097301	12-JUL-85	12-JUL-85	YES
7209	WESTFORD	72097301	17-JUL-85	17-JUL-85	YES
7209	WESTFORD	72097301	22-JUL-85	22-JUL-85	YES
7209	WESTFORD	72097301	27-JUL-85	27-JUL-85	YES
7209	WESTFORD	72097301	01-AUG-85	01-AUG-85	YES
7209	WESTFORD	72097301	06-AUG-85	06-AUG-85	YES
7209	WESTFORD	72097301	11-AUG-85	11-AUG-85	YES
7209	WESTFORD	72097301	16-AUG-85	16-AUG-85	YES
7209	WESTFORD	72097301	21-AUG-85	21-AUG-85	YES
7209	WESTFORD	72097301	24-AUG-85	24-AUG-85	YES
7209	WESTFORD	72097301	26-AUG-85	26-AUG-85	YES
7209	WESTFORD	72097301	31-AUG-85	31-AUG-85	YES
7209	WESTFORD	72097301	05-SEP-85	05-SEP-85	YES
7209	WESTFORD	72097301	10-SEP-85	10-SEP-85	YES
7209	WESTFORD	72097301	11-SEP-85	11-SEP-85	YES
7209	WESTFORD	72097301	15-SEP-85	15-SEP-85	YES
7209	WESTFORD	72097301	20-SEP-85	20-SEP-85	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 41
Current Site Name: WESTFORD
Location: HAYSTACK OBSERVATORY, WESTFORD, MA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7209	WESTFORD	72097301	25-SEP-85	25-SEP-85	YES
7209	WESTFORD	72097301	30-SEP-85	30-SEP-85	YES
7209	WESTFORD	72097301	05-OCT-85	05-OCT-85	YES
7209	WESTFORD	72097301	10-OCT-85	10-OCT-85	YES
7209	WESTFORD	72097301	15-OCT-85	15-OCT-85	YES
7209	WESTFORD	72097301	20-OCT-85	20-OCT-85	YES
7209	WESTFORD	72097301	25-OCT-85	25-OCT-85	YES
7209	WESTFORD	72097301	29-OCT-85	29-OCT-85	YES
7209	WESTFORD	72097301	30-OCT-85	30-OCT-85	YES
7209	WESTFORD	72097301	04-NOV-85	04-NOV-85	YES
7209	WESTFORD	72097301	09-NOV-85	09-NOV-85	YES
7209	WESTFORD	72097301	14-NOV-85	14-NOV-85	YES
7209	WESTFORD	72097301	19-NOV-85	19-NOV-85	YES
7209	WESTFORD	72097301	20-NOV-85	20-NOV-85	YES
7209	WESTFORD	72097301	21-NOV-85	21-NOV-85	YES
7209	WESTFORD	72097301	24-NOV-85	24-NOV-85	YES
7209	WESTFORD	72097301	29-NOV-85	29-NOV-85	YES
7209	WESTFORD	72097301	04-DEC-85	04-DEC-85	YES
7209	WESTFORD	72097301	09-DEC-85	09-DEC-85	YES
7209	WESTFORD	72097301	10-DEC-85	10-DEC-85	YES
7209	WESTFORD	72097301	14-DEC-85	14-DEC-85	YES
7209	WESTFORD	72097301	19-DEC-85	19-DEC-85	YES
7209	WESTFORD	72097301	23-DEC-85	23-DEC-85	YES
7209	WESTFORD	72097301	29-DEC-85	29-DEC-85	YES
7209	WESTFORD	72097301	14-JAN-86	14-JAN-86	YES
7209	WESTFORD	72097301	18-FEB-86	18-FEB-86	YES
7209	WESTFORD	72097301	11-MAR-86	11-MAR-86	YES
7209	WESTFORD	72097301	20-MAR-86	20-MAR-86	YES
7209	WESTFORD	72097301	01-APR-86	01-APR-86	YES
7209	WESTFORD	72097301	04-APR-86	04-APR-86	YES
7209	WESTFORD	72097301	17-APR-86	17-APR-86	YES
7209	WESTFORD	72097301	14-MAY-86	14-MAY-86	YES
7209	WESTFORD	72097301	29-MAY-86	29-MAY-86	YES
7209	WESTFORD	72097301	11-JUN-86	11-JUN-86	YES
7209	WESTFORD	72097301	16-JUN-86	16-JUN-86	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 41
Current Site Name: WESTFORD
Location: HAYSTACK OBSERVATORY, WESTFORD, MA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7209	WESTFORD	72097301	18-JUN-86	18-JUN-86	YES
7209	WESTFORD	72097301	16-JUL-86	16-JUL-86	YES
7209	WESTFORD	72097301	13-AUG-86	13-AUG-86	YES
7209	WESTFORD	72097301	25-AUG-86	25-AUG-86	YES
7209	WESTFORD	72097301	16-SEP-86	16-SEP-86	YES
7209	WESTFORD	72097301	17-SEP-86	17-SEP-86	YES
7209	WESTFORD	72097301	14-OCT-86	14-OCT-86	YES
7209	WESTFORD	72097301	16-OCT-86	16-OCT-86	YES
7209	WESTFORD	72097301	31-OCT-86	31-OCT-86	YES
7209	WESTFORD	72097301	03-NOV-86	03-NOV-86	YES
7209	WESTFORD	72097301	05-NOV-86	05-NOV-86	YES
7209	WESTFORD	72097301	12-NOV-86	12-NOV-86	YES
7209	WESTFORD	72097301	08-DEC-86	08-DEC-86	YES
7209	WESTFORD	72097301	17-DEC-86	17-DEC-86	YES
7209	WESTFORD	72097301	14-JAN-87	14-JAN-87	NO
7209	WESTFORD	72097301	03-FEB-87	03-FEB-87	NO
7209	WESTFORD	72097301	24-FEB-87	24-FEB-87	NO
7209	WESTFORD	72097301	25-MAR-87	25-MAR-87	NO
7209	WESTFORD	72097301	26-MAR-87	26-MAR-87	NO
7209	WESTFORD	72097301	09-APR-87	09-APR-87	NO
7209	WESTFORD	72097301	14-APR-87	14-APR-87	NO
7209	WESTFORD	72097301	01-MAY-87	01-MAY-87	NO
7209	WESTFORD	72097301	04-MAY-87	04-MAY-87	NO
7209	WESTFORD	72097301	24-MAY-87	24-MAY-87	NO
7209	WESTFORD	72097301	18-JUN-87	18-JUN-87	NO
7209	WESTFORD	72097301	23-JUN-87	23-JUN-87	NO
7209	WESTFORD	72097301	24-JUN-87	24-JUN-87	NO
7209	WESTFORD	72097301	08-JUL-87	08-JUL-87	NO
7209	WESTFORD	72097301	11-JUL-87	11-JUL-87	NO
7209	WESTFORD	72097301	18-JUL-87	18-JUL-87	NO
7209	WESTFORD	72097301	02-AUG-87	02-AUG-87	NO
7209	WESTFORD	72097301	04-AUG-87	04-AUG-87	NO
7209	WESTFORD	72097301	05-AUG-87	05-AUG-87	NO
7209	WESTFORD	72097301	08-AUG-87	08-AUG-87	NO
7209	WESTFORD	72097301	19-AUG-87	19-AUG-87	NO

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 41
Current Site Name: WESTFORD
Location: HAYSTACK OBSERVATORY, WESTFORD, MA

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7209	WESTFORD	72097301	22-AUG-87	22-AUG-87	NO
7209	WESTFORD	72097301	24-AUG-87	24-AUG-87	NO
7209	WESTFORD	72097301	25-AUG-87	25-AUG-87	NO
7209	WESTFORD	72097301	11-SEP-87	11-SEP-87	NO
7209	WESTFORD	72097301	16-SEP-87	16-SEP-87	NO
7209	WESTFORD	72097301	11-SEP-87	11-SEP-87	NO
7209	WESTFORD	72097301	16-OCT-87	16-OCT-87	NO
7209	WESTFORD	72097301	22-OCT-87	22-OCT-87	NO
7209	WESTFORD	72097301	31-OCT-87	31-OCT-87	NO
7209	WESTFORD	72097301	03-NOV-87	03-NOV-87	NO
7209	WESTFORD	72097301	05-NOV-87	05-NOV-87	NO
7209	WESTFORD	72097301	10-NOV-87	10-NOV-87	NO
7209	WESTFORD	72097301	08-DEC-87	08-DEC-87	NO
7209	WESTFORD	72097301	15-DEC-87	15-DEC-87	NO

-- SITE INFORMATION --

Site Number: 119

Current Site Name: WETTZELL

Other Site Name:

Location: WETTZELL, WEST GERMANY

Geographic Region: EUROPE

Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE SLR AND VLBI TECHNIQUE DEVELOPMENT AND MEDITERRANEAN TECTONICS, THE DETERMINATION OF PLATE MOTION AND STABILITY, AND POLAR MOTION/EARTH ROTATION.

Site Description: THE SITE IS LOCATED NEAR WETTZELL APPROXIMATELY FIFTY KILOMETERS NORTHEAST OF MUNICH, WEST GERMANY. THE SITE IS OPERATED BY THE GERMAN GEODETIC RESEARCH INSTITUTE. THE SITE CONSISTS OF A FIXED LASER HOUSED IN A BUILDING WITH A MOVABLE ROOF, THE TWENTY-METER VLBI RADIO TELESCOPE, AND FOUR CONCRETE MONUMENTED PADS COMPATIBLE FOR OCCUPATION BY ANY MOBILE LASER RANGING SYSTEM.

Site Topo Map: 1:200000 TOPOGRAPHISCHE UBERSICHTSKARTE BLATT CC 7142 DEGGENDORF. 1:50000 TOPOGRAPHISCHE KARTE BLATTE L 6942. BOTH AVAILABLE FROM BAYERISCHES LANDESVERMESSUNGSAMT, ALEXANDRASTRABE 4, 8000 MUNCHEN, F.R.G.

-- GEOLOGICAL INFORMATION --

Geological Province: BOHMER WALD BORDERING PFALZER WALD DEFINED AS THE MOLDANUVICUM- A SUB-REGION OF THE VARISTICUM (CENTRAL EUROPEAN MOUNTAIN BELT).

Local Geology: METAMORPHIC BASEMENT SUPERIMPOSED BY GLACIAL TILL. GEOLOGIC MAPS ARE AVAILABLE AT BAYERISCHES GEOLOGISCHES LANDESAMT, PRINZREGENTEN STRABE, 8000 MUNCHEN, F.R.G. SCALES AVAILABLE INCLUDE: 1:100000 BLATT 6944 BODENMAIS, 1:200000 BLATTE 7142 DEGGENDORF, 1:1000000 UBERSICHTSKARTE BRD.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 119
 Current Site Name: WETTZELL
 Location: WETTZELL, WEST GERMANY
 Number of Observing Monuments: 7
 Surveyed into National Network? YES

Monument Number: 7224
 Type of Monument: INTERSECTION OF AXES OF ROTATION
 Monument Inscription: NONE
 Systems Using Monument: 20-METER FIXED VLBI ANTENNA

Latitude: N 49 08' 41.4423''
 Longitude: E 12 52' 39.9567''
 Elevation Above MSL (Geoid): 661.225 meters
 Height Above Ellipsoid: NOT AVAILABLE
 Survey Source/Date Reported: STATION SURVEY/16-MAY-86
 Datum/Ellipsoid: NSWC 922/A = 6 378 145, B = 6 356 760

Comments: DATA REPORTED IN "ERGEBNISSE DER NEUVERMESSUNG DES LOKALEN
 FESTPUNKTFELDES DER FUNDAMENTALSTATION WETTZELL" (DECEMBER 1985).

Differential Coordinates FROM Observing Monument 7224 TO
 Reference Monuments and Other Observing Monuments

Data Source: DR. E. REINHART, IFAG

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7595	----	11.338	90.279	-41.504
7596	"A"	42.556	102.066	-69.409
7597	"A"	62.013	91.283	-81.571
7598	----	39.384	71.978	-58.362
7834	----	-10.003	46.149	-11.072

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 119
Current Site Name: WETTZELL
Location: WETTZELL, WEST GERMANY

Monument Number: 7595
Type of Monument: BRONZE MARKER IN LARGE CONCRETE PILLAR
FLUSH WITH PAD
Monument Inscription: NONE
Systems Using Monument: MOBILE LASERS

Latitude: N 49 08' 40.2954''
Longitude: E 12 52' 42.1741''
Elevation Above MSL (Geoid): 650.225 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: STATION SURVEY/16-MAY-86
Datum/Ellipsoid: NSWC 922/A = 6 378 145, B = 6 356 760

Comments: DATA REPORTED IN "ERGEBNISSE DER NEUVERMESSUNG DES LOKALEN
FESTPUNKTFELDES DER FUNDAMENTALSTATION WETTZELL" (DECEMBER 1985).

Differential Coordinates FROM Observing Monument 7595 TO
Reference Monuments and Other Observing Monuments

Data Source: DR. E. REINHART, IFAG

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7224	----	-11.338	-90.279	41.504
7596	"A"	31.218	11.787	-27.905
7597	"A"	50.675	1.004	-40.067
7598	----	28.046	-18.301	-16.858
7834	----	-21.341	-44.130	30.432

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --

-- MONUMENT INFORMATION --

(Continued)

Site Number: 119
Current Site Name: WETTZELL
Location: WETTZELL, WEST GERMANY

Monument Number: 7596
Type of Monument: BRONZE MARKER IN LARGE CONCRETE PILLAR
FLUSH WITH THE PAD
Monument Inscription: A
Systems Using Monument: MTLRS-2 AND MTLRS-1

Latitude: N 49 08' 38.8952''
Longitude: E 12 52' 42.3977''
Elevation Above MSL (Geoid): 650.746 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: STATION SURVEY/16-MAY-86
Datum/Ellipsoid: NSWC 922/A = 6 378 145, B = 6 356 760

Comments: DATA REPORTED IN "ERGESNISSE DER NEUVERMESSUNG DES LOKALEN
FESTPUNKTFELDES DER FUNDAMENTALSTATION WETTZELL" (DECEMBER 1985).

Differential Coordinates FROM Observing Monument 7596 TO
Reference Monuments and Other Observing Monuments

Data Source: DR. E. REINHART, IFAG

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7224	----	-42.556	-102.066	69.409
7595	----	-31.218	-11.787	27.905
7597	"A"	19.457	-10.783	-12.162
7598	----	-3.172	-30.088	11.047
7834	----	-52.559	-55.916	58.337

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 119
Current Site Name: WETTZELL
Location: WETTZELL, WEST GERMANY

Monument Number: 7597
Type of Monument: BRONZE MARKER IN LARGE CONCRETE PILLAR
FLUSH WITH THE PAD
Monument Inscription: A
Systems Using Monument: MTLRS-1

Latitude: N 49 08' 38.2322''
Longitude: E 12 52' 41.6652''
Elevation Above MSL (Geoid): 652.382 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: STATION SURVEY/16-MAY-86
Datum/Ellipsoid: NSWC 922/A = 6 378 145, B = 6 356 760

Comments: DATA REPORTED IN "ERGESNISSE DER NEUVERMESSUNG DES LOKALEN
FESTPUNKTFELDES DER FUNDAMENTALSTATION WETTZELL" (DECEMBER 1985).

Differential Coordinates FROM Observing Monument 7597 TO
Reference Monuments and Other Observing Monuments

Data Source: IFAG

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	"B"	2.206	-1.323	-0.011
--	"C"	1.476	-4.519	-0.009
--	"D"	-1.780	-4.244	-0.009
--	"E"	-2.372	-1.731	-0.005
--	"Z"	0.000	-2.499	-0.014
7224	----	-62.013	-91.283	81.571
7595	----	-50.675	-1.004	40.067
7596	"A"	-19.457	10.783	12.162
7598	----	-22.629	-19.305	23.209
7834	----	-72.016	-45.134	70.499

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 119
Current Site Name: WETTZELL
Location: WETTZELL, WEST GERMANY

Monument Number: 7598
Type of Monument: BRONZE MARKER IN LARGE CONCRETE PILLAR
FLUSH WITH PAD
Monument Inscription: NONE
Systems Using Monument: MOBILE LASERS

Latitude: N 49 08' 39.3690''
Longitude: E 12 52' 40.9855''
Elevation Above MSL (Geoid): 652.691 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: STATION SURVEY/16-MAY-86
Datum/Ellipsoid: NSWC 922/A = 6 378 145, B = 6 356 760

Comments: DATA REPORTED IN "ERGESNISSE DER NEUVERMESSUNG DES LOKALEN
FESTPUNKTFELDES DER FUNDAMENTALSTATION WETTZELL" (DECEMBER 1985).

Differential Coordinates FROM Observing Monument 7598 TO
Reference Monuments and Other Observing Monuments

Data Source: DR. E. REINHART, IFAG

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7224	----	-39.384	-71.978	58.362
7595	----	-28.046	18.301	16.858
7596	"A"	3.172	30.088	-11.047
7597	"A"	22.629	19.305	-23.209
7834	----	-49.387	-25.829	47.290

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --

-- MONUMENT INFORMATION --

(Continued)

Site Number: 119
Current Site Name: WETTZELL
Location: WETTZELL, WEST GERMANY

Monument Number: 7599
Type of Monument: NAIL IN PARKING LOT; PROVISIONAL MARKER
Monument Inscription: NONE
Systems Using Monument: MTLRS-1

Latitude: N 49 08' 45.20''
Longitude: E 12 52' 43.40''
Elevation Above MSL (Geoid): 610.6 meters
Height Above Ellipsoid: 613.5 meters
Survey Source/Date Reported: INSTITUT FUR ANGEWANDTE GEODASIE/05-JUL-84
Datum/Ellipsoid: EUROPEAN 50/INTERNATIONAL

Comments: THIS NAIL WAS A PROVISIONAL POSITION AND IS NOT TO BE
RE-OCCUPIED.

Differential Coordinates FROM Observing Monument 7599 TO
Reference Monuments and Other Observing Monuments

Data Source: IFAG

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
7224	----	19.2	-14.4	2.3

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --

-- MONUMENT INFORMATION --

(Continued)

Site Number: 119
Current Site Name: WETTZELL
Location: WETTZELL, WEST GERMANY

Monument Number: 7834
Type of Monument: INTERSECTION OF AXES OF LASER
Monument Inscription: NONE
Systems Using Monument: WETZEL FIXED LASER

Latitude: N 49 08' 41.6898''
Longitude: E 12 52' 40.2863''
Elevation Above MSL (Geoid): 653.20 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: STATION SURVEY/16-MAY-86
Datum/Ellipsoid: NSWC 922/A = 6 378 145, B = 6 356 760

Comments: DATA REPORTED IN "ERGEBNISSE DER NEUVERMESSUNG DES LOKALEN
FESTPUNKTFELDES DER FUNDAMENTALSTATION WETTZELL" (DECEMBER 1985).

Differential Coordinates FROM Observing Monument 7834 TO
Reference Monuments and Other Observing Monuments

Data Source: DR. E. REINHART, IFAG

Mon. Number	Monument Inscription	----- Differential Coordinates -----		
		X	Y	Z
7224	----	10.003	-46.149	11.072
7595	----	21.341	44.130	-30.432
7596	"A"	52.559	55.916	-58.337
7597	"A"	72.016	45.134	-70.499
7598	----	49.387	25.829	-47.290

Mon. Number	Monument Inscription	----- Differential Coordinates -----		
		North	East	Up
7224	----	0.2475"	-2.3296"	8.025"
7595	----	-1.8878"	-1.3944"	-2.975 M
7596	"A"	2.1114"	-2.7946"	-2.454 M
7597	"A"	1.3789	-3.4576	-0.818
7598	----	0.6992	-2.3208	-0.509

-- SITE SKETCH --

Site Number: 119
Current Site Name: WETTZELL
Location: WETTZELL, WEST GERMANY

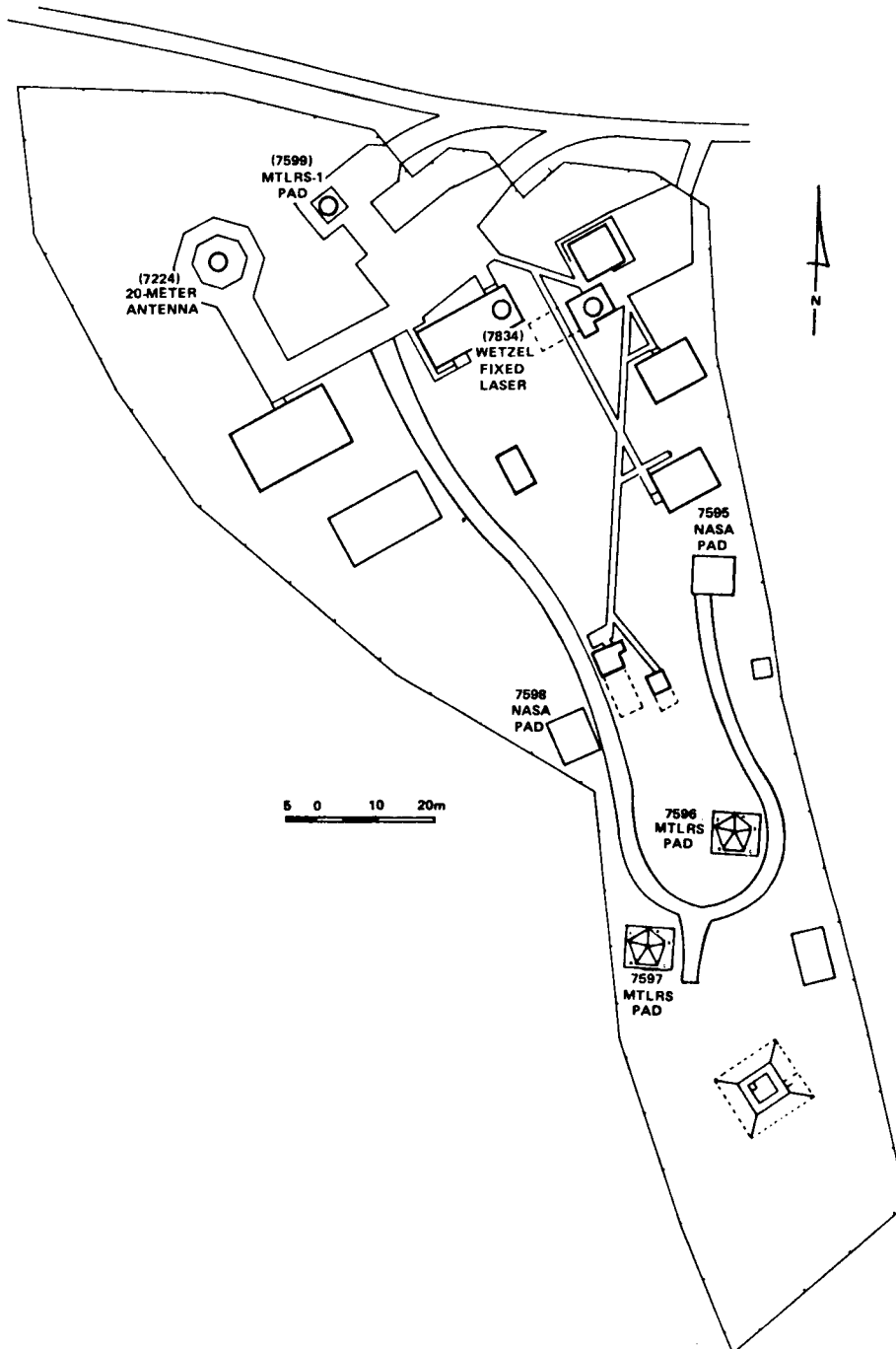


Figure 4-WETZEL. WETTZELL Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 119
 Current Site Name: WETTZELL
 Location: WETTZELL, WEST GERMANY

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7596	MTLRS-2	75961601	01-MAR-85	16-APR-85	YES
7596	MTLRS-1	75961502	07-AUG-85	31-DEC-85	YES
7597	MTLRS-1	75971501	01-FEB-85	30-APR-85	YES
7599	MTLRS-1	75991501	01-SEP-84	31-DEC-84	YES
7834	WETLAS	78343001	01-MAY-76	---	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7224	20-METER	72247801	16-NOV-83	16-NOV-83	YES
7224	20-METER	72247801	21-DEC-83	21-DEC-83	YES
7224	20-METER	72247801	09-JAN-84	09-JAN-84	YES
7224	20-METER	72247801	24-JAN-84	24-JAN-84	YES
7224	20-METER	72247801	29-JAN-84	29-JAN-84	YES
7224	20-METER	72247801	03-FEB-84	03-FEB-84	YES
7224	20-METER	72247801	08-FEB-84	08-FEB-84	YES
7224	20-METER	72247801	18-FEB-84	18-FEB-84	YES
7224	20-METER	72247801	23-FEB-84	23-FEB-84	YES
7224	20-METER	72247801	28-FEB-84	28-FEB-84	YES
7224	20-METER	72247801	04-MAR-84	04-MAR-84	YES
7224	20-METER	72247801	09-MAR-84	09-MAR-84	YES
7224	20-METER	72247801	14-MAR-84	14-MAR-84	YES
7224	20-METER	72247801	19-MAR-84	19-MAR-84	YES
7224	20-METER	72247801	25-MAR-84	25-MAR-84	YES
7224	20-METER	72247801	03-APR-84	03-APR-84	YES
7224	20-METER	72247801	08-APR-84	08-APR-84	YES
7224	20-METER	72247801	13-APR-84	13-APR-84	YES
7224	20-METER	72247801	18-APR-84	18-APR-84	YES
7224	20-METER	72247801	23-APR-84	23-APR-84	YES
7224	20-METER	72247801	28-APR-84	28-APR-84	YES
7224	20-METER	72247801	03-MAY-84	03-MAY-84	YES
7224	20-METER	72247801	08-MAY-84	08-MAY-84	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 119
Current Site Name: WETTZELL
Location: WETTZELL, WEST GERMANY

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7224	20-METER	72247801	13-MAY-84	13-MAY-84	YES
7224	20-METER	72247801	18-MAY-84	18-MAY-84	YES
7224	20-METER	72247801	23-MAY-84	23-MAY-84	YES
7224	20-METER	72247801	28-MAY-84	28-MAY-84	YES
7224	20-METER	72247801	02-JUN-84	02-JUN-84	YES
7224	20-METER	72247801	07-JUN-84	07-JUN-84	YES
7224	20-METER	72247801	12-JUN-84	12-JUN-84	YES
7224	20-METER	72247801	17-JUN-84	17-JUN-84	YES
7224	20-METER	72247801	22-JUN-84	22-JUN-84	YES
7224	20-METER	72247801	27-JUN-84	27-JUN-84	YES
7224	20-METER	72247801	02-JUL-84	02-JUL-84	YES
7224	20-METER	72247801	07-JUL-84	07-JUL-84	YES
7224	20-METER	72247801	12-JUL-84	12-JUL-84	YES
7224	20-METER	72247801	17-JUL-84	17-JUL-84	YES
7224	20-METER	72247801	01-AUG-84	01-AUG-84	YES
7224	20-METER	72247801	06-AUG-84	06-AUG-84	YES
7224	20-METER	72247801	11-AUG-84	11-AUG-84	YES
7224	20-METER	72247801	16-AUG-84	16-AUG-84	YES
7224	20-METER	72247801	21-AUG-84	21-AUG-84	YES
7224	20-METER	72247801	26-AUG-84	26-AUG-84	YES
7224	20-METER	72247801	30-AUG-84	30-AUG-84	YES
7224	20-METER	72247801	31-AUG-84	31-AUG-84	YES
7224	20-METER	72247801	02-SEP-84	02-SEP-84	YES
7224	20-METER	72247801	05-SEP-84	05-SEP-84	YES
7224	20-METER	72247801	10-SEP-84	10-SEP-84	YES
7224	20-METER	72247801	15-SEP-84	15-SEP-84	YES
7224	20-METER	72247801	20-SEP-84	20-SEP-84	YES
7224	20-METER	72247801	25-SEP-84	25-SEP-84	YES
7224	20-METER	72247801	30-SEP-84	30-SEP-84	YES
7224	20-METER	72247801	05-OCT-84	05-OCT-84	YES
7224	20-METER	72247801	10-OCT-84	10-OCT-84	YES
7224	20-METER	72247801	15-OCT-84	15-OCT-84	YES
7224	20-METER	72247801	20-OCT-84	20-OCT-84	YES
7224	20-METER	72247801	25-OCT-84	25-OCT-84	YES
7224	20-METER	72247801	30-OCT-84	30-OCT-84	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 119
Current Site Name: WETTZELL
Location: WETTZELL, WEST GERMANY

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7224	20-METER	72247801	04-NOV-84	04-NOV-84	YES
7224	20-METER	72247801	09-NOV-84	09-NOV-84	YES
7224	20-METER	72247801	14-NOV-84	14-NOV-84	YES
7224	20-METER	72247801	19-NOV-84	19-NOV-84	YES
7224	20-METER	72247801	24-NOV-84	24-NOV-84	YES
7224	20-METER	72247801	29-NOV-84	29-NOV-84	YES
7224	20-METER	72247801	04-DEC-84	04-DEC-84	YES
7224	20-METER	72247801	09-DEC-84	09-DEC-84	YES
7224	20-METER	72247801	14-DEC-84	14-DEC-84	YES
7224	20-METER	72247801	19-DEC-84	19-DEC-84	YES
7224	20-METER	72247801	23-DEC-84	23-DEC-84	YES
7224	20-METER	72247801	29-DEC-84	29-DEC-84	YES
7224	20-METER	72247801	03-JAN-85	03-JAN-85	YES
7224	20-METER	72247801	08-JAN-85	08-JAN-85	YES
7224	20-METER	72247801	13-JAN-85	13-JAN-85	YES
7224	20-METER	72247801	18-JAN-85	18-JAN-85	YES
7224	20-METER	72247801	23-JAN-85	23-JAN-85	YES
7224	20-METER	72247801	24-JAN-85	24-JAN-85	YES
7224	20-METER	72247801	28-JAN-85	28-JAN-85	YES
7224	20-METER	72247801	02-FEB-85	02-FEB-85	YES
7224	20-METER	72247801	07-FEB-85	07-FEB-85	YES
7224	20-METER	72247801	12-FEB-85	12-FEB-85	YES
7224	20-METER	72247801	17-FEB-85	17-FEB-85	YES
7224	20-METER	72247801	22-FEB-85	22-FEB-85	YES
7224	20-METER	72247801	27-FEB-85	27-FEB-85	YES
7224	20-METER	72247801	04-MAR-85	04-MAR-85	YES
7224	20-METER	72247801	05-MAR-85	05-MAR-85	YES
7224	20-METER	72247801	09-MAR-85	09-MAR-85	YES
7224	20-METER	72247801	14-MAR-85	14-MAR-85	YES
7224	20-METER	72247801	19-MAR-85	19-MAR-85	YES
7224	20-METER	72247801	24-MAR-85	24-MAR-85	YES
7224	20-METER	72247801	29-MAR-85	29-MAR-85	YES
7224	20-METER	72247801	03-APR-85	03-APR-85	YES
7224	20-METER	72247801	08-APR-85	08-APR-85	YES
7224	20-METER	72247801	13-APR-85	13-APR-85	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 119
Current Site Name: WETTZELL
Location: WETTZELL, WEST GERMANY

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7224	20-METER	72247801	18-APR-85	18-APR-85	YES
7224	20-METER	72247801	23-APR-85	23-APR-85	YES
7224	20-METER	72247801	24-APR-85	24-APR-85	YES
7224	20-METER	72247801	28-APR-85	28-APR-85	YES
7224	20-METER	72247801	03-MAY-85	03-MAY-85	YES
7224	20-METER	72247801	08-MAY-85	08-MAY-85	YES
7224	20-METER	72247801	09-MAY-85	09-MAY-85	YES
7224	20-METER	72247801	13-MAY-85	13-MAY-85	YES
7224	20-METER	72247801	18-MAY-85	18-MAY-85	YES
7224	20-METER	72247801	23-MAY-85	23-MAY-85	YES
7224	20-METER	72247801	28-MAY-85	28-MAY-85	YES
7224	20-METER	72247801	02-JUN-85	02-JUN-85	YES
7224	20-METER	72247801	07-JUN-85	07-JUN-85	YES
7224	20-METER	72247801	12-JUN-85	12-JUN-85	YES
7224	20-METER	72247801	17-JUN-85	17-JUN-85	YES
7224	20-METER	72247801	18-JUN-85	18-JUN-85	YES
7224	20-METER	72247801	19-JUN-85	19-JUN-85	YES
7224	20-METER	72247801	22-JUN-85	22-JUN-85	YES
7224	20-METER	72247801	27-JUN-85	27-JUN-85	YES
7224	20-METER	72247801	02-JUL-85	02-JUL-85	YES
7224	20-METER	72247801	07-JUL-85	07-JUL-85	YES
7224	20-METER	72247801	12-JUL-85	12-JUL-85	YES
7224	20-METER	72247801	17-JUL-85	17-JUL-85	YES
7224	20-METER	72247801	22-JUL-85	22-JUL-85	YES
7224	20-METER	72247801	27-JUL-85	27-JUL-85	YES
7224	20-METER	72247801	01-AUG-85	01-AUG-85	YES
7224	20-METER	72247801	06-AUG-85	06-AUG-85	YES
7224	20-METER	72247801	11-AUG-85	11-AUG-85	YES
7224	20-METER	72247801	16-AUG-85	16-AUG-85	YES
7224	20-METER	72247801	21-AUG-85	21-AUG-85	YES
7224	20-METER	72247801	26-AUG-85	26-AUG-85	YES
7224	20-METER	72247801	31-AUG-85	31-AUG-85	YES
7224	20-METER	72247801	05-SEP-85	05-SEP-85	YES
7224	20-METER	72247801	10-SEP-85	10-SEP-85	YES
7224	20-METER	72247801	11-SEP-85	11-SEP-85	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 119
Current Site Name: WETTZELL
Location: WETTZELL, WEST GERMANY

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7224	20-METER	72247801	15-SEP-85	15-SEP-85	YES
7224	20-METER	72247801	20-SEP-85	20-SEP-85	YES
7224	20-METER	72247801	25-SEP-85	25-SEP-85	YES
7224	20-METER	72247801	30-SEP-85	30-SEP-85	YES
7224	20-METER	72247801	05-OCT-85	05-OCT-85	YES
7224	20-METER	72247801	10-OCT-85	10-OCT-85	YES
7224	20-METER	72247801	15-OCT-85	15-OCT-85	YES
7224	20-METER	72247801	20-OCT-85	20-OCT-85	YES
7224	20-METER	72247801	25-OCT-85	25-OCT-85	YES
7224	20-METER	72247801	29-OCT-85	29-OCT-85	YES
7224	20-METER	72247801	30-OCT-85	30-OCT-85	YES
7224	20-METER	72247801	04-NOV-85	04-NOV-85	YES
7224	20-METER	72247801	09-NOV-85	09-NOV-85	YES
7224	20-METER	72247801	14-NOV-85	14-NOV-85	YES
7224	20-METER	72247801	19-NOV-85	19-NOV-85	YES
7224	20-METER	72247801	20-NOV-85	20-NOV-85	YES
7224	20-METER	72247801	21-NOV-85	21-NOV-85	YES
7224	20-METER	72247801	24-NOV-85	24-NOV-85	YES
7224	20-METER	72247801	29-NOV-85	29-NOV-85	YES
7224	20-METER	72247801	04-DEC-85	04-DEC-85	YES
7224	20-METER	72247801	09-DEC-85	09-DEC-85	YES
7224	20-METER	72247801	10-DEC-85	10-DEC-85	YES
7224	20-METER	72247801	14-DEC-85	14-DEC-85	YES
7224	20-METER	72247801	19-DEC-85	19-DEC-85	YES
7224	20-METER	72247801	23-DEC-85	23-DEC-85	YES
7224	20-METER	72247801	29-DEC-85	29-DEC-85	YES
7224	20-METER	72247801	14-JAN-86	14-JAN-86	YES
7224	20-METER	72247801	20-MAR-86	20-MAR-86	YES
7224	20-METER	72247801	04-APR-86	04-APR-86	YES
7224	20-METER	72247801	14-MAY-86	14-MAY-86	YES
7224	20-METER	72247801	16-JUN-86	16-JUN-86	YES
7224	20-METER	72247801	18-JUN-86	18-JUN-86	YES
7224	20-METER	72247801	25-AUG-86	25-AUG-86	YES
7224	20-METER	72247801	16-SEP-86	16-SEP-86	YES
7224	20-METER	72247801	16-OCT-86	16-OCT-86	YES

-- PREVIOUS OCCUPATION INFORMATION --

(Continued)

Site Number: 119
Current Site Name: WETTZELL
Location: WETTZELL, WEST GERMANY

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7224	20-METER	72247801	03-NOV-86	03-NOV-86	YES
7224	20-METER	72247801	05-NOV-86	05-NOV-86	YES
7224	20-METER	72247801	08-DEC-86	08-DEC-86	YES
7224	20-METER	72247801	03-FEB-87	03-FEB-87	NO
7224	20-METER	72247801	25-MAR-87	25-MAR-87	NO
7224	20-METER	72247801	09-APR-87	09-APR-87	NO
7224	20-METER	72247801	04-MAY-87	04-MAY-87	NO
7224	20-METER	72247801	23-JUN-87	23-JUN-87	NO
7224	20-METER	72247801	24-JUN-87	24-JUN-87	NO
7224	20-METER	72247801	25-AUG-87	25-AUG-87	NO
7224	20-METER	72247801	16-SEP-87	16-SEP-87	NO
7224	20-METER	72247801	16-OCT-87	16-OCT-87	NO
7224	20-METER	72247801	03-NOV-87	03-NOV-87	NO
7224	20-METER	72247801	05-NOV-87	05-NOV-87	NO
7224	20-METER	72247801	08-DEC-87	08-DEC-87	NO

-- SITE INFORMATION --

Site Number: 806

Current Site Name: WHITEHORSE

Other Site Name:

Location: WHITEHORSE, YUKON TERRITORY, CANADA

Geographic Region: NORTH AMERICA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION.

Site Description: THE SITE IS LOCATED IN WEST CANADA 250 METERS SOUTH OF THE CONTROL TOWER OF WHITEHORSE AIRPORT AND FIFTY METERS NORTH OF AN UPPER ATMOSPHERIC STATION OPERATED BY ENVIRONMENT CANADA. THE SITE IS NORTH OF THE NORTHEAST TRENDING AIRSTRIIP USED BY SMALL AIRCRAFT. THE SITE IS IN THE CORNER OF A THIRTY METER SQUARE AREA OF PAVEMENT. THE OBSERVING MONUMENT IS FLUSH WITH THE PAVEMENT AND CAN ACCOMMODATE ANY MOBILE VLBI SYSTEM.

Site Topo Map: MACRAE 105D/10, EDITION 4, 1980, 1:50,000, TOPOGRAPHIC MAP SERIES. AVAILABLE FROM CANADA MAP OFFICE, DEPARTMENT OF ENERGY, MINES AND RESOURCES, OTTAWA.

-- GEOLOGICAL INFORMATION --

Geological Province: COLUMBIA INTERMONTANE BELT

Local Geology: QUARTERNARY ALLUVIUM DEPOSITS OF THE YUKON RIVER VALLEY UNDERLAIN BY UPPER TERTIARY ROCKS OF THE LEWES RIVER GROUP. THE SITE IS AT AN ELEVATION OF 2300 FEET ABOVE SEA LEVEL SURROUNDED BY MOUNTAINS RISING TO ELEVATIONS OF 4000 TO 5000 FEET.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 806
 Current Site Name: WHITEHORSE
 Location: WHITEHORSE, YUKON TERRITORY, CANADA
 Number of Observing Monuments: 1
 Surveyed into National Network? YES

Monument Number: 7284
 Type of Monument: BRONZE TABLET IN 30 INCH DIAMETER CONCRETE
 PIER
 Monument Inscription: 828102
 Systems Using Monument: MOBILE VLBI

Latitude: N 60 42' 40.41576''
 Longitude: W 135 04' 37.48119''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 707.870 meters
 Survey Source/Date Reported: GEODETIC SURVEY OF CANADA/01-JAN-83
 Datum/Ellipsoid: GEODETIC REFERENCE SYSTEM 1980/GEM 10B
 Comments: A=6378137 METERS, B=6356752.3141 METERS IS GODDARD EARTH MODEL
 10B.

Differential Coordinates FROM Observing Monument 7284 TO
 Reference Monuments and Other Observing Monuments

Data Source: GEODETIC SURVEY OF CANADA

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
-- 828101		-22.310	63.328	16.193
-- 828103		44.459	-82.185	-16.528
-- 828104		-95.693	-56.421	-60.860

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 806
Current Site Name: WHITEHORSE
Location: WHITEHORSE, YUKON TERRITORY, CANADA

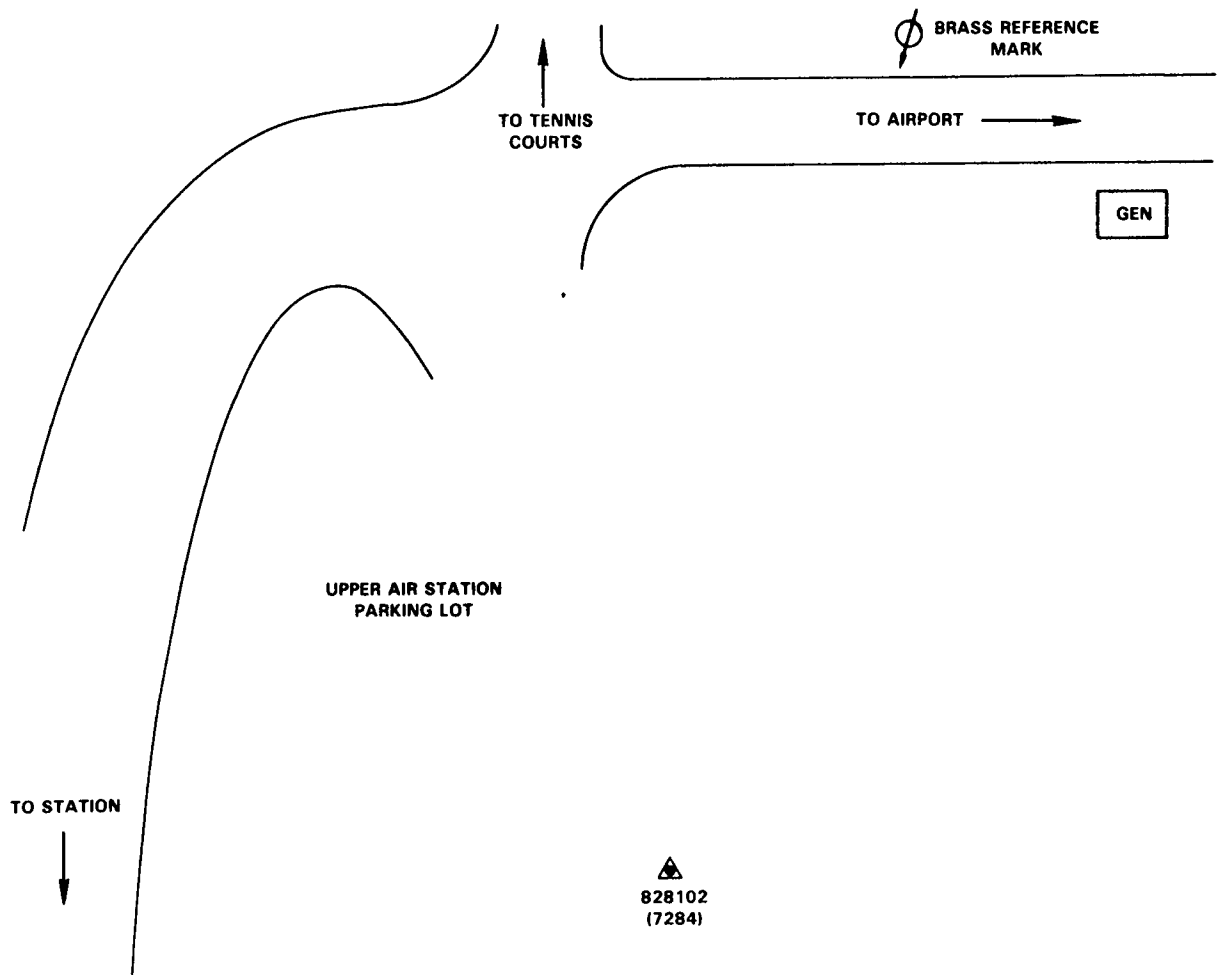


Figure 4-WHRSE. WHITEHORSE Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 806
Current Site Name: WHITEHORSE
Location: WHITEHORSE, YUKON TERRITORY, CANADA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7284	MV-2	72845201	07-AUG-84	09-AUG-84	YES
7284	MV-2	72845202	12-AUG-85	13-AUG-85	YES
7284	MV-2	72845203	17-AUG-86	19-AUG-86	YES

-- SITE INFORMATION --

Site Number: 676

Current Site Name: XRISOKALARIA
Other Site Name: PELOPPONISOS
Location: XRISOKALARIA, GREECE
Geographic Region: MEDITERRANEAN
Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION AND THE KINEMATICS OF EAST AND CENTRAL MEDITERRANEAN.

Site Description: THIS WEGENER-MEDLAS SITE IS LOCATED SIX KILOMETERS WEST OF THE CITY OF KORONI, GREECE. THE LASER PAD IS COMPATIBLE FOR OCCUPATION BY MTLRS-1 OR MTLRS-2.

Site Topo Map: KORONI 1 :50,000.

-- GEOLOGICAL INFORMATION --

Geological Province: NONE

Local Geology: UPPER CRETACEOUS PELAGIC LIMESTONE INTERSPERSED WITH JURASSIC AND CRETACEOUS FLYSCHES SANDSTONES AND LIMESTONES.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 676
 Current Site Name: XRISOKALARIA
 Location: XRISOKALARIA, GREECE
 Number of Observing Monuments: 1
 Surveyed into National Network? NO

Monument Number: 7525
 Type of Monument: BRASS DISK
 Monument Inscription: 7525 1987
 Systems Using Monument: MOBILE LASER RANGING SYSTEM

Latitude: N 36 47' 28.93500
 Longitude: E 21 52' 38.93200
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 479.230 meters
 Survey Source/Date Reported: GREEK HELLENIC MAPPING AGENCY/BFEC/10-SEP-87
 Datum/Ellipsoid: WGS 72

Comments: THIS STATION IS HELD FIXED WITH PRELIMINARY COORDINATES
 DETERMINED BY GHMA AND MTLRS OCCUPATIONS.

Differential Coordinates FROM Observing Monument 7525 TO
 Reference Monuments and Other Observing Monuments

Data Source: BFEC

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	NONE (CENTRAL MONUMENT FOR MTLRS)	0.846	0.341	-1.209
--	NONE (7525 RM 1 1987) W3 PAINTED	52.274	-25.293	-53.985
--	NONE (7525 RM 2 1987) W4 PAINTED	0.511	-24.203	14.421
--	NONE (7525 RM 3 1987) W2 PAINTED	-1.525	33.309	-18.698
--	7525 AZIMUTH MARK 1987	-163.065	139.646	101.382
--	7525 CALIBRATION PIER REFERENCE	-88.420	-81.979	155.418
--	7525 A 1987	0.131	2.102	-1.189
--	7525 B 1987	1.893	2.064	-3.355
--	7525 C 1987	2.790	-0.495	-3.197
--	7525 D 1987	1.806	-1.434	-1.521

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	NONE (CENTRAL MONUMENT FOR MTLRS)	-1.514	0.002	0.006
--	NONE (7525 RM 1 1987) W3 PAINTED	-66.641	-42.949	-1.024
--	NONE (7525 RM 2 1987) W4 PAINTED	16.665	-22.650	1.793
--	NONE (7525 RM 3 1987) W2 PAINTED	-21.560	31.479	-2.390
--	7525 A 1987	-1.494	1.902	0.012
--	7525 B 1987	-4.200	1.210	0.014
--	7525 C 1987	-4.001	-1.499	0.011
--	7525 D 1987	-1.902	-2.004	0.003

-- SITE SKETCH --

Site Number: 676
Current Site Name: XRISOKALARIA
Location: XRISOKALARIA, GREECE

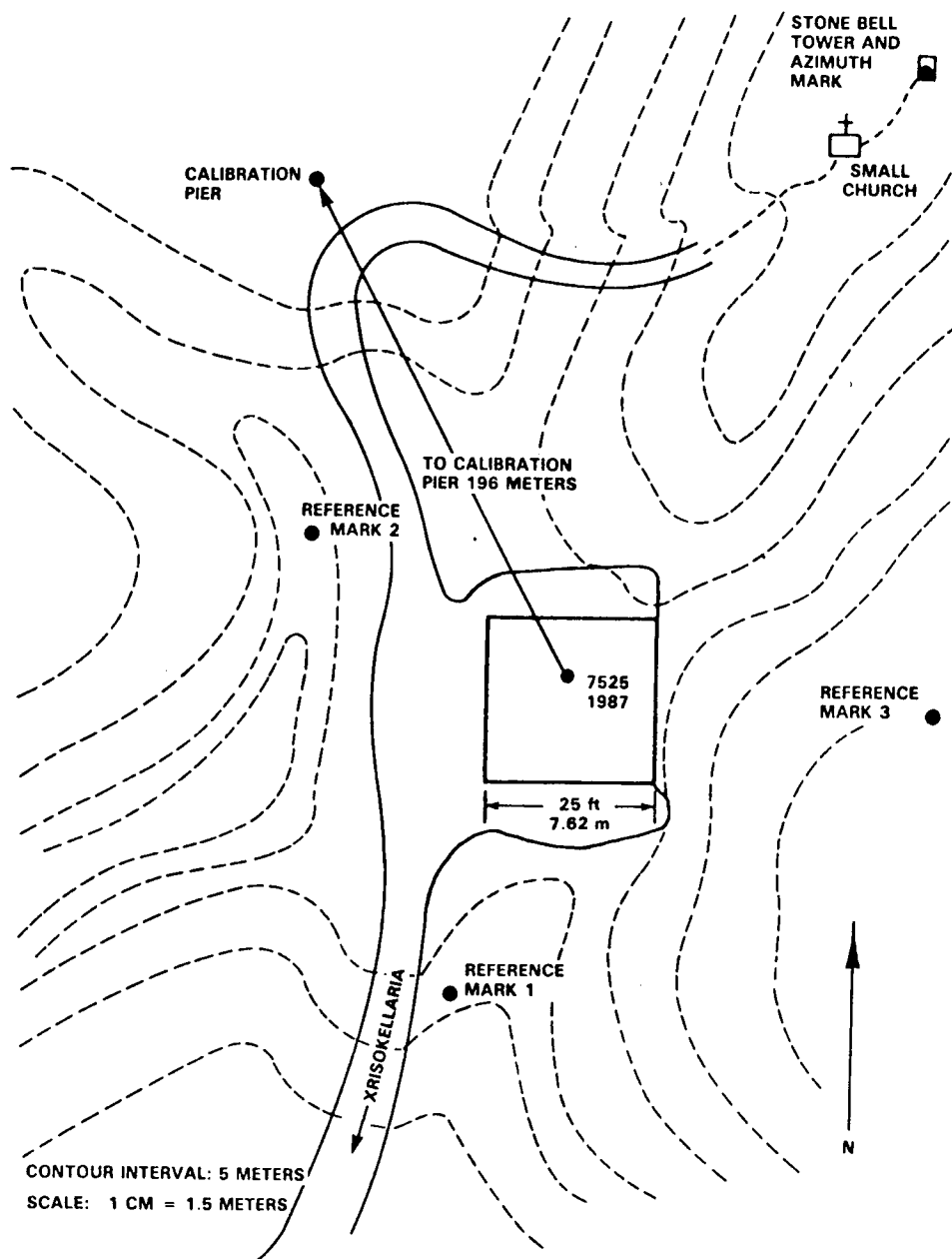


Figure 4-XRISOK. XRISOKALARIA Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 676
 Current Site Name: XRISOKALARIA
 Location: XRISOKALARIA, GREECE

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7525	MTLRS-2	75251601	03-SEP-86	12-SEP-86	YES
7525	MTLRS-2	75251602	13-SEP-86	15-SEP-86	YES
7525	MTLRS-2	75251603	15-SEP-86	18-OCT-86	YES
7525	TLRS-1	75251104	10-SEP-87	11-DEC-87	NO

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-- No Previous Occupations --					

-- SITE INFORMATION --

Site Number: 133

Current Site Name: YARAGADEE

Other Site Name:

Location: YARAGADEE, AUSTRALIA

Geographic Region: AUSTRALIA

Tectonic Plate: AUSTRALIAN-INDIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF PLATE MOTION, PLATE STABILITY, AND POLAR MOTION/EARTH ROTATION.

Site Description: THE SITE IS LOCATED ON THE WEST COAST OF AUSTRALIA, 53 MILES EAST SOUTHEAST OF GERALDTOWN AND 218 MILES NORTH OF PERTH. THE MONUMENTED PAD IS COMPATIBLE FOR OCCUPATION BY MOBILE LASER SYSTEMS. MOBLAS-5 FIRST OCCUPIED THE STATION IN AUGUST 1979 AND WILL REMAIN FOR THE DURATION OF THE PROJECT. THIS SITE PLAYS A KEY ROLE IN THE MEASUREMENT OF THE AUSTRALIAN PLATE MOVEMENT.

Site Topo Map: SERIES R611 SHEET 1939 'MINGENEW', DIVISION OF NATIONAL MAPPING, AUSTRALIA

-- GEOLOGICAL INFORMATION --

Geological Province: PERTH BASIN

Local Geology: JURASSIC YARAGADEE FORMATION; SANDSTONE, SILTSTONE, SHALE. THE TERRAIN IS COVERED BY LOW SCRUB.

Comments: THE SITE IS ON THE EDGE OF AN ESCARPMENT RUNNING NORTHEAST FROM WHICH A FLAT PLATEAU EXTENDS TOWARDS THE NORTH.

-- MONUMENT INFORMATION --

Site Number: 132
Current Site Name: YARAGADEE
Location: YARAGADEE, AUSTRALIA
Number of Observing Monuments: 1
Surveyed into National Network? YES

Monument Number: 7090
Type of Monument: BRASS DISK
Monument Inscription: NONE
Systems Using Monument: MOBLAS

Latitude: S 29 02' 51.8303''
Longitude: E 115 20' 43.1805''
Elevation Above MSL (Geoid): 266.568 meters
Height Above Ellipsoid: NOT AVAILABLE
Survey Source/Date Reported: AUSTRALIAN DIVISION OF THE NATIONAL MAPPING/
24-SEP-79
Datum/Ellipsoid: AUSTRALIAN GEODETIC 1966/AUSTRALIA NATIONAL
MAPPING

Comments: NONE

Differential Coordinates FROM Observing Monument 7090 TO
Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

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OF POOR QUALITY

-- SITE SKETCH --

Site Number: 133
Current Site Name: YARAGADEE
Location: YARAGADEE, AUSTRALIA

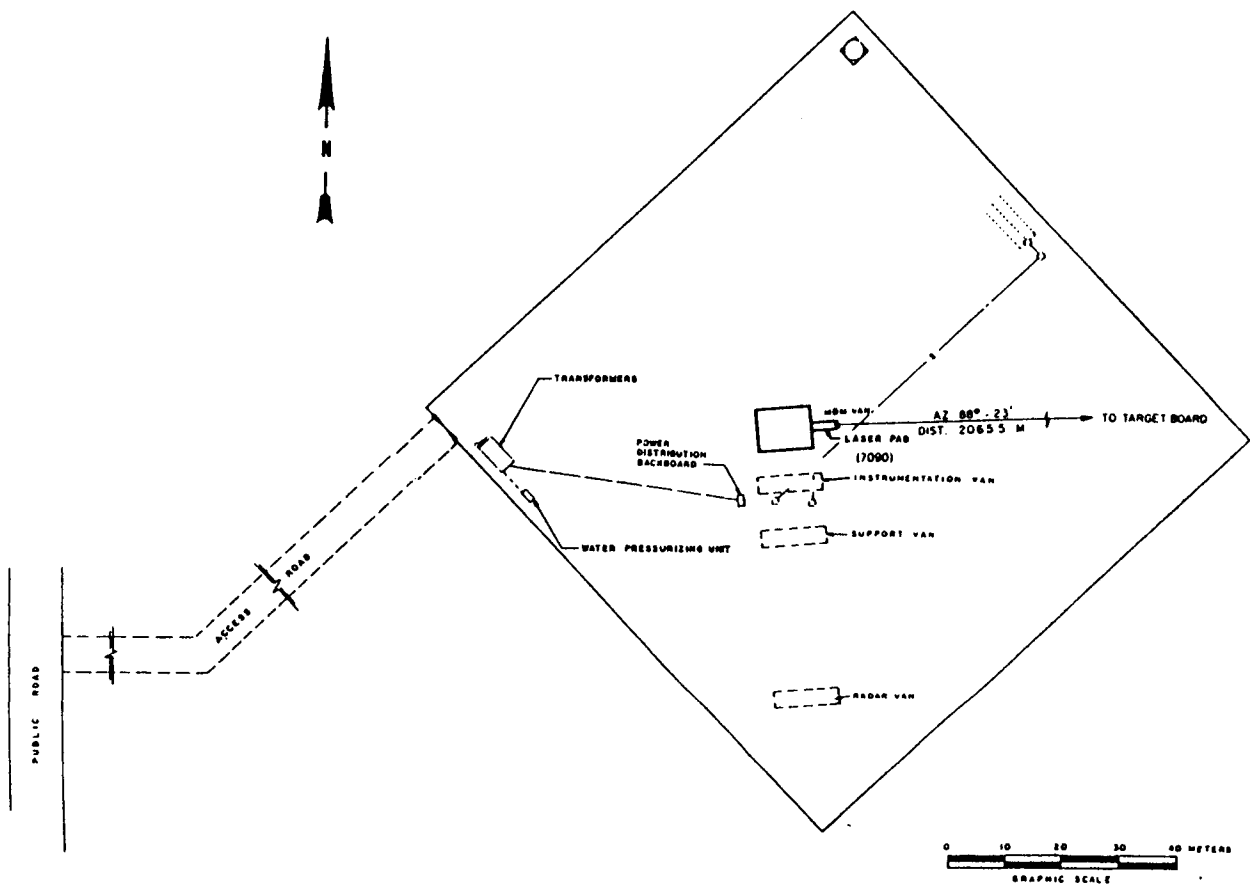


Figure 4-YARGAD. YARAGADEE Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 133
Current Site Name: YARAGADEE
Location: YARAGADEE, AUSTRALIA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7090	MOBLAS-5	70900501	01-JUL-79	27-JUL-83	YES
7090	MOBLAS-5	70900502	27-JUL-83	19-NOV-84	YES
7090	MOBLAS-5	70900503	19-NOV-84	05-SEP-85	YES
7090	MOBLAS-5	70900504	05-SEP-85	16-APR-87	YES
7090	MOBLAS-5	70900505	23-APR-87	13-AUG-87	YES
7090	MOBLAS-5	70900506	13-AUG-87	26-AUG-87	YES
7090	MOBLAS-5	70900507	26-AUG-87	---	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
--------------------	---------------------	--------------------------	------------------	----------------	-----------------

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 408

Current Site Name: YELLOWKNIFE

Other Site Name:

Location: YELLOWKNIFE, NORTHWEST TERRITORY, CANADA

Geographic Region: NORTH AMERICA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION.

Site Description: THE SITE IS LOCATED ABOUT 150 METERS NORTH-NORTHWEST OF A TRANSPORT CANADA RECEIVING ANTENNA, 400 METERS NORTHWEST OF THE ENERGY, MINES AND RESOURCES GEOPHYSICAL LABORATORY AND TWO KILOMETERS NORTHWEST OF THE CONTROL TOWER OF THE YELLOWKNIFE AIRPORT. THE OBSERVING MONUMENT IS NEAR THE HIGHEST POINT OF AN OUTCROP NEAR THE EDGE OF AN OPEN SANDY AREA. A GRAVEL PAD HAS BEEN PREPARED TO ACCOMMODATE THE MOBILE VLBI SYSTEMS.

Site Topo Map: MCE 327, EDITION 2, 1981, 1:25,000 TOPOGRAPHIC MILITARY CITY MAP SERIES A902. AVAILABLE FROM CANADA MAP OFFICE, DEPARTMENT OF ENERGY, MINES AND RESOURCES, OTTAWA.

-- GEOLOGICAL INFORMATION --

Geological Province: PRECAMBRIAN SLAVE PROVINCE

Local Geology: OUTCROP OF PRECAMBRIAN BASEMENT; BIOTITE GRANODIORITE, GRANITE, AND ALLIED ROCK OF EARLY PRECAMBRIAN AGE.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 408
 Current Site Name: YELLOWKNIFE
 Location: YELLOWKNIFE, NORTHWEST TERRITORY, CANADA
 Number of Observing Monuments: 1
 Surveyed into National Network? YES

Monument Number: 7285
 Type of Monument: CANADIAN BRONZE DISK SET IN BEDROCK OUTCROP
 Monument Inscription: LBI 829098
 Systems Using Monument: MOBILE VLBI

Latitude: N 62 28' 45.59791''
 Longitude: W 114 28' 20.53700''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 176.820 meters
 Survey Source/Date Reported: GEODETIC SURVEY OF CANADA/01-JAN-83
 Datum/Ellipsoid: GEODETIC REFERENCE SYSTEM 1980/GEM 10B

Comments: A=6378137 METERS, B=6356752.3141 METERS IS GODDARD EARTH MODEL 10B.

Differential Coordinates FROM Observing Monument 7285 TO
 Reference Monuments and Other Observing Monuments

Data Source: GEODETIC SURVEY OF CANADA

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	LAKE 829097	149.363	-97.470	-12.352
--	LOW S829100	7.646	85.411	45.586
--	TEE 829099	-193.609	87.504	4.560

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
-- North, East, Up Differential Coordinate Information Not Available --				

-- SITE SKETCH --

Site Number: 408
Current Site Name: YELLOWKNIFE
Location: YELLOWKNIFE, NORTHWEST TERRITORY, CANADA

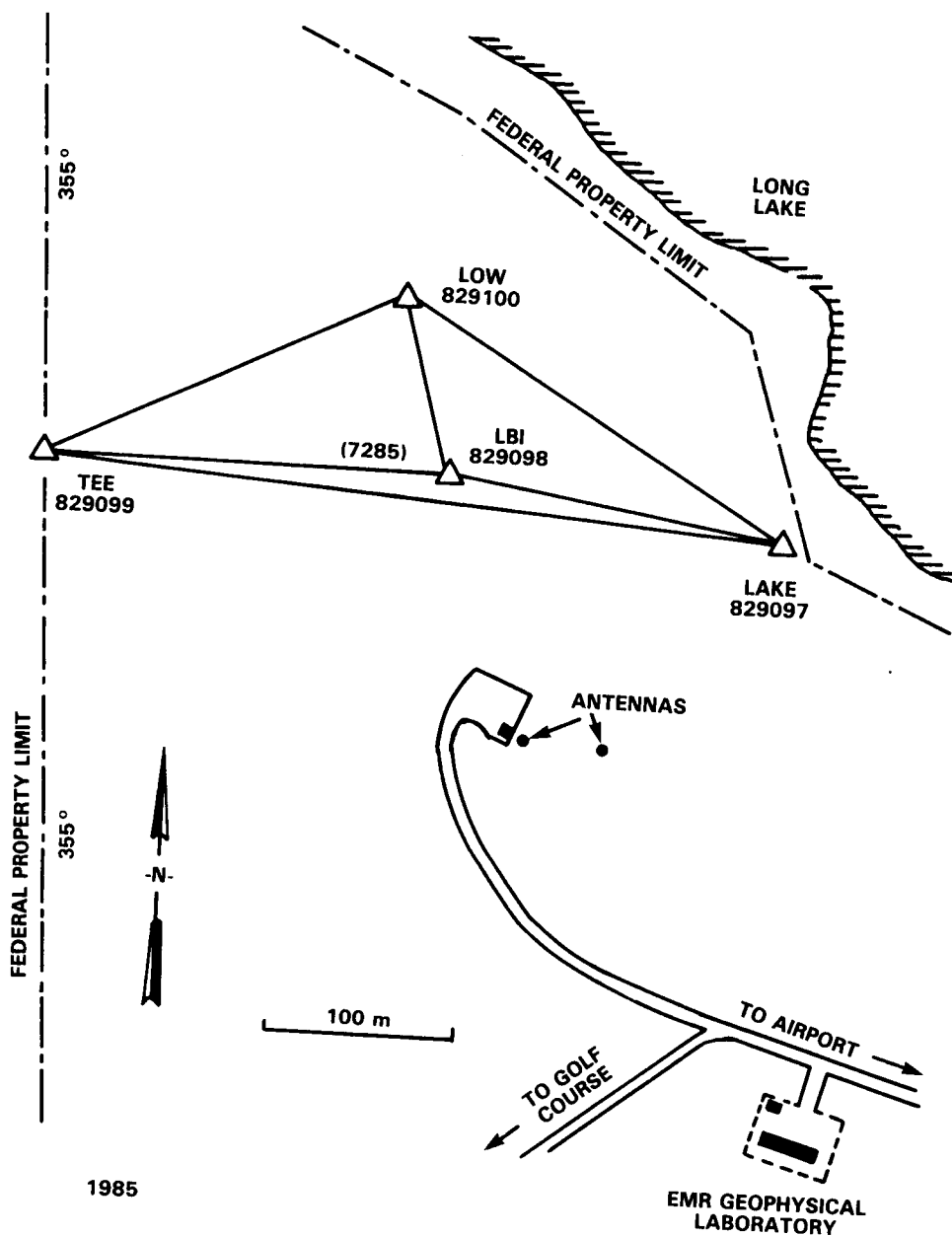


Figure 4-YLWKNF. YELLOWKNIFE Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 408
Current Site Name: YELLOWKNIFE
Location: YELLOWKNIFE, NORTHWEST TERRITORY, CANADA

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-- No Previous Occupations --					

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7285	MV-3	72855301	11-AUG-84	15-AUG-84	YES
7285	MV-3	72855302	28-AUG-85	29-AUG-85	YES

-- SITE INFORMATION --

Site Number: 683

Current Site Name: YIGILCA

Other Site Name:

Location: YIGILCA, TURKEY

Geographic Region: MEDITERRANEAN

Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF MEDITERRANEAN TECTONICS.

Site Description: THE SITE IS LOCATED ON A PRIVATELY-OWNED PIECE OF LAND, NINE KILOMETERS SOUTH-SOUTHEAST OF YIGILCA, ON A PLATEAU 100 TO 150 METERS SOUTH OF THE ROAD TO THE VILLAGE OF KIRIK. A PAD HAS BEEN CONSTRUCTED FOR OCCUPATION BY A MOBILE LASER SYSTEM.

Site Topo Map: UNKNOWN

-- GEOLOGICAL INFORMATION --

Geological Province: NONE

Local Geology: LIMESTONE OUTCROPS ARE SCATTERED THROUGHOUT THE AREA AND BASEMENT ROCK IS VISIBLE AT THE LOWER LEVELS ON THE MOUNTAIN SLOPES.

Comments: NONE

-- MONUMENT INFORMATION --

Site Number: 683
 Current Site Name: YIGILCA
 Location: YIGILCA, TURKEY
 Number of Observing Monuments: 1
 Surveyed into National Network? NO

Monument Number: 7587
 Type of Monument: BRASS MONUMENT
 Monument Inscription: 7586 1987
 Systems Using Monument: MOBILE LASER RANGING SYSTEM

Latitude: N 40 56' 16''
 Longitude: E 33 26' 05''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 820.0 meters
 Survey Source/Date Reported: SCALED MAP COORDINATES/BFEC/09-OCT-87
 Datum/Ellipsoid: INTERNATIONAL

Comments: THIS POSITION AND ELEVATION ARE BOTH ASSUMED AND MUST BE
 CORRECTED WHEN THE CORRECT VALUES ARE OBTAINED.

Differential Coordinates FROM Observing Monument 7587 TO
 Reference Monuments and Other Observing Monuments

Data Source: BFEC 87-10-09

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	7587 AZIMUTH MARK	-184.617	79.682	120.913
--	CALIBRATION PIER REFERENCE POINT	132.401	34.857	-120.900
--	7587 RM 1 1987	33.855	9.162	-31.832
--	7587 RM 2 1987	6.933	-33.147	9.870
--	7587 RM 3 1987	-20.786	28.256	0.939
--	7587 A 1987	-0.045	2.073	-1.274
--	7587 B 1987	1.918	2.200	-3.245
--	7587 C 1987	3.131	-0.190	-2.906
--	7587 D 1987	2.136	-1.198	-1.286
--	TLRS-1 OCCUPATION POINT 6/87	2.966	1.915	0.976

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	7587 RM 1 1987	-45.866	-11.007	4.299
--	7587 RM 2 1987	15.632	-31.482	-2.959
--	7587 RM 3 1987	1.874	35.033	-0.727
--	7587 A 1987	-1.686	1.755	-0.000
--	7587 B 1987	-4.294	0.779	-0.001
--	7587 C 1987	-3.839	-1.884	-0.010
--	7587 D 1987	-1.707	-2.177	0.005
--	TLRS-1 OCCUPATION POINT 6/87	-1.576	-0.036	3.307

-- SITE SKETCH --

Site Number: 683
Current Site Name: YIGILCA
Location: YIGILCA, TURKEY

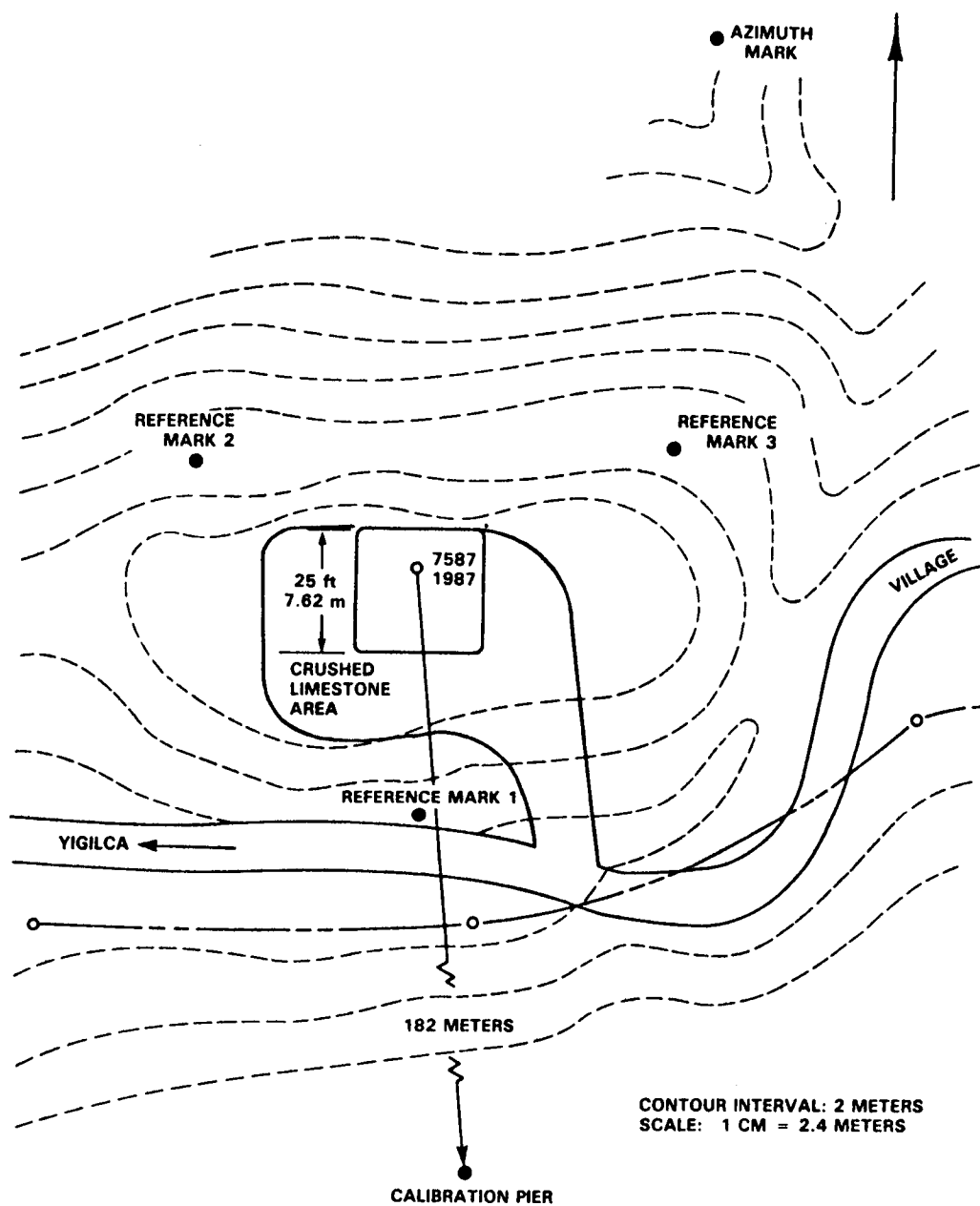


Figure 4-YIGLCA. YIGILCA Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 683
Current Site Name: YIGILCA
Location: YIGILCA, TURKEY

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7587	TLRS-1	75871101	20-MAY-87	03-JUL-87	NO

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
--------------------	---------------------	--------------------------	------------------	----------------	-----------------

-- No Previous Occupations --

-- SITE INFORMATION --

Site Number: 682

Current Site Name: YOZGAT

Other Site Name:

Location: YOZGAT, TURKEY

Geographic Region: MEDITERRANEAN

Tectonic Plate: EURASIAN

-- Site Information Not Yet Available --

-- SITE INFORMATION --

Site Number: 202

Current Site Name: YUMA

Other Site Name:

Location: YUMA PROVING GROUNDS, AZ

Geographic Region: NORTH AMERICA

Tectonic Plate: NORTH AMERICAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF REGIONAL DEFORMATION AND INTERCOMPARISON OF MEASUREMENT TECHNIQUES.

Site Description: THE NEW SITE IS LOCATED ON AN ABANDONED MORTAR GP-21A PAD ON THE U.S. ARMY YUMA PROVING GROUNDS. THE OBSERVING MONUMENT IS SET IN THE MORTAR PAD TO THE WEST OF THE GUN MOUNT AREA. THE ELECTRONICS VAN FOR THE MOBILE VLBI SYSTEMS LOCATES ON THE EAST SIDE OF THIS GUN MOUNT. BOLT INSERTS HAVE BEEN PLACED IN THE PAD AROUND THE OBSERVING MONUMENT MAKING IT COMPATIBLE FOR OCCUPATION BY TLRS-3 OR -4.

Site Topo Map: IMPERIAL RESERVOIR, ARIZONA. U.S.G.S., RESTON, VA 22092

-- GEOLOGICAL INFORMATION --

Geological Province: MOJAVE DESERT

Local Geology: QUATERNARY ALLUVIUM

Comments: THE ORIGINAL SITE WAS OCCUPIED BY MV-2; THE NEW SITE WAS CHOSEN FOR SAFETY REASONS. NO TIE HAS BEEN MADE BETWEEN THE SITES.

-- MONUMENT INFORMATION --

Site Number: 202
 Current Site Name: YUMA
 Location: YUMA PROVING GROUNDS, AZ
 Number of Observing Monuments: 1
 Surveyed into National Network? YES

Monument Number: 7273
 Type of Monument: USC & GS STATION DISK
 Monument Inscription: LORAC WEST 1956
 Systems Using Monument: MOBILE VLBI AND LASERS

Latitude: N 32 54' 12.96626''
 Longitude: W 114 20' 15.27960''
 Elevation Above MSL (Geoid): NOT AVAILABLE
 Height Above Ellipsoid: 142.620 meters
 Survey Source/Date Reported: NGS GPS RESULTS/01-JUL-87
 Datum/Ellipsoid: WGS 72

Comments: THIS MONUMENT, THE ORIGINAL SITE, IS NOW ABANDONED.

Differential Coordinates FROM Observing Monument 7273 TO
 Reference Monuments and Other Observing Monuments

Data Source:

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z

-- X, Y, Z Differential Coordinate Information Not Available --				

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up

-- North, East, Up Differential Coordinate Information Not Available --				

-- MONUMENT INFORMATION --

(Continued)

Site Number: 202
Current Site Name: YUMA
Location: YUMA PROVING GROUNDS, AZ

Monument Number: 7894
Type of Monument: NGS STATION DISK
Monument Inscription: YUMA NCMN 1983
Systems Using Monument: MOBILE LASER

Latitude: N 32 56' 20.89116''
Longitude: W 114 12' 11.64380''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 256.410 meters
Survey Source/Date Reported: NGS GPS RESULTS/01-JUL-87
Datum/Ellipsoid: WGS 72

Comments: THIS IS THE NEW SITE ON THE MORTAR PAD LOCATED ON THE FIRING RANGE.

Differential Coordinates FROM Observing Monument 7894 TO
Reference Monuments and Other Observing Monuments

Data Source: NGS GPS RESULTS JULY 1987

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	YUMA NCMN NO. 2	-66.342	-19.724	-72.391
--	YUMA NCMN NO. 3	-3.879	38.805	50.909
--	GP 21 A	17.495	11.445	27.440

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	YUMA NCMN NO. 2	-85.325	-52.424	-1.438
--	YUMA NCMN NO. 3	61.106	-19.447	-0.688

-- SITE SKETCH --

Site Number: 202
Current Site Name: YUMA
Location: YUMA PROVING GROUNDS, AZ

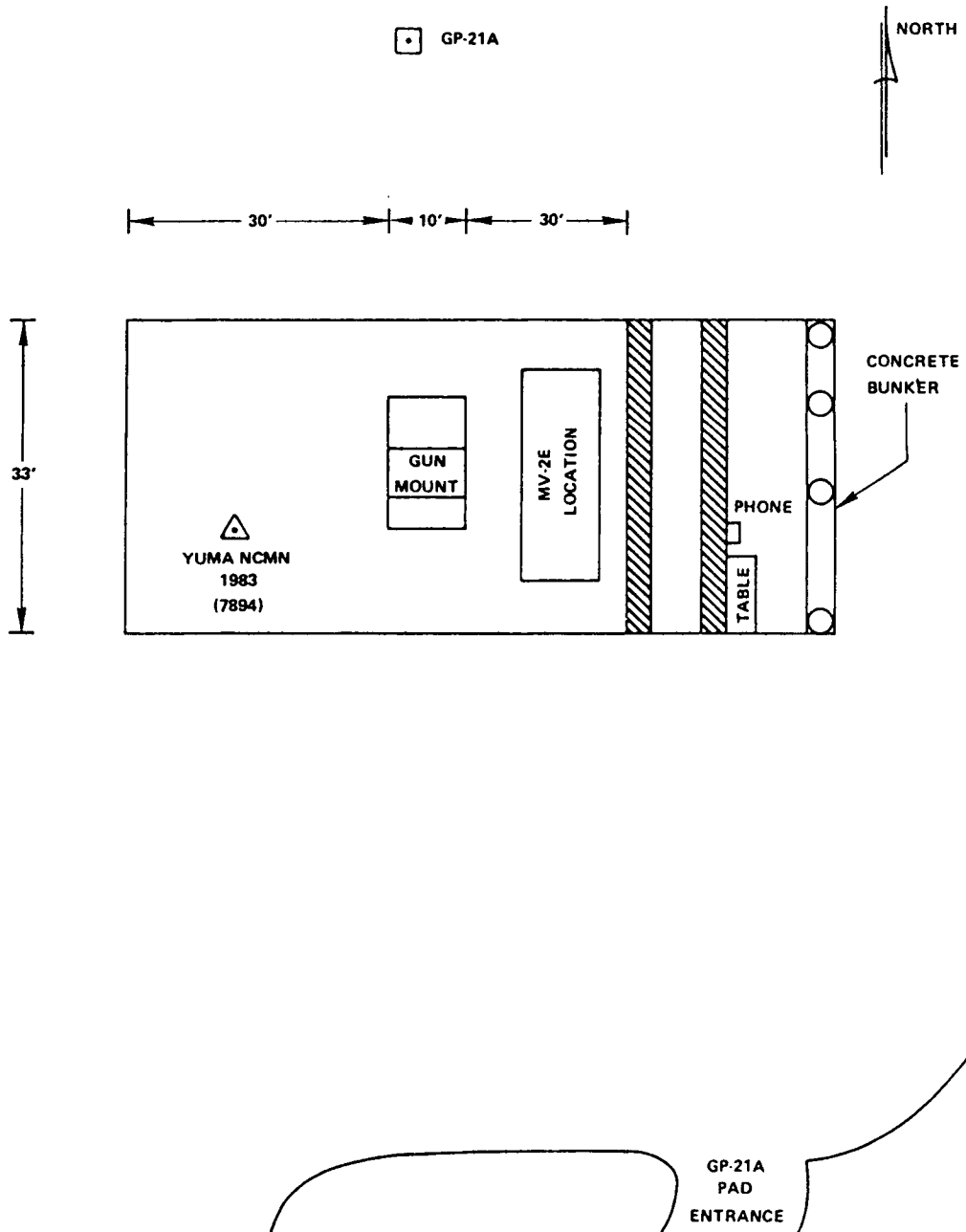


Figure 4-YUMA. YUMA Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 202
 Current Site Name: YUMA
 Location: YUMA PROVING GROUNDS, AZ

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7894	TLRS-1	78941101	22-FEB-83	04-JUL-83	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
7273	MV-2	72735201	15-MAY-81	16-MAY-81	YES
7894	MV-2	78945201	03-NOV-83	04-NOV-83	YES
7894	MV-2	78945201	05-NOV-83	06-NOV-83	YES
7894	MV-2	78945202	31-OCT-84	01-NOV-84	YES
7894	MV-3	78945303	01-MAR-85	02-MAR-85	YES
7894	MV-2	78945204	02-NOV-85	06-NOV-85	YES
7894	MV-2	78945205	09-DEC-85	11-DEC-85	YES
7894	MV-3	78945306	23-FEB-86	27-FEB-86	YES
7894	MV-3	78945307	07-APR-86	11-APR-86	YES
7894	MV-3	78945308	20-MAY-86	22-MAY-86	YES
7894	MV-3	78945309	29-OCT-86	02-NOV-86	YES
7894	MV-2	78945210	10-DEC-86	14-DEC-86	YES
7894	MV-3	78945311	05-FEB-87	07-FEB-87	NO
7894	MV-3	78945312	22-MAR-87	23-MAR-87	NO
7894	MV-2	78945213	10-MAY-87	11-MAY-87	NO
7894	MV-2	78945214	24-OCT-87	25-OCT-87	NO
7894	MV-2	78945315	04-DEC-87	06-DEC-87	NO

-- SITE INFORMATION --

Site Number: 882

Current Site Name: ZIMMERWALD

Other Site Name:

Location: BERN, SWITZERLAND

Geographic Region: EUROPE

Tectonic Plate: EURASIAN

Primary Scientific Purposes: MEASUREMENTS SUPPORTING THE DETERMINATION OF POLAR MOTION/EARTH ROTATION.

Site Description: THE STATION IS LOCATED AT THE ZIMMERWALD OBSERVATORY OF BERN UNIVERSITY. THE OBSERVATORY HAS CONTRIBUTED SATELLITE DATA TOWARDS INTERNATIONAL GEODETIC PROGRAMS SINCE 1966. THE EARLY PHOTOGRAPHIC METHODS WERE SUBSTITUTED BY LASER RANGING IN 1970. DURING THE PAST DECADE THE FIRST LASER SYSTEM WAS REPLACED BY A DESIGN DEDICATED TO LASER RANGING. A THIRD GENERATION LASER WILL BE DEDICATED TO TRACKING LAGEOS.

Site Topo Map: NOT AVAILABLE.

-- GEOLOGICAL INFORMATION --

Geological Province: ALPINE MOLASSE BASIN OF SWITZERLAND

Local Geology: LATE PLEISTOCENE MORaine MATERIAL SUPERIMPOSED ON SANDSTONES OF THE UPPER MARINE MOLASSE (HELVETIEN MIOCENE)

Comments: THE SITE WILL BE TIED INTO A NETWORK OF REFERENCE POINTS LOCATED IN SOLID ROCK AREAS USING GPS RECEIVERS.

-- MONUMENT INFORMATION --

Site Number: 882
Current Site Name: ZIMMERWALD
Location: BERN, SWITZERLAND
Number of Observing Monuments: 1
Surveyed into National Network? YES

Monument Number: 7810
Type of Monument: INTERSECTION OF HORIZONTAL AND VERTICAL
AXES
Monument Inscription: NONE
Systems Using Monument: FIXED LASER

Latitude: N 46 52' 37.950''
Longitude: E 7 27' 53.916''
Elevation Above MSL (Geoid): NOT AVAILABLE
Height Above Ellipsoid: 943.710 meters
Survey Source/Date Reported: W. GURTNER/09-AUG-84
Datum/Ellipsoid: NWL9D/NWL8E

Comments: NONE

Differential Coordinates FROM Observing Monument 7810 TO
Reference Monuments and Other Observing Monuments

Data Source: FEDERAL OFFICE OF TOPOGRAPHY

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		X	Y	Z
--	CH-99 RETRIG REFERENCE MONUMENT	-9.606	34.803	-0.804

Mon. Number	Monument Inscription	---- Differential Coordinates ----		
		North	East	Up
--	CH-99 RETRIG REFERENCE MONUMENT	3.102	35.756	-4.006

-- SITE SKETCH --

Site Number: 882
Current Site Name: ZIMMERWALD
Location: BERN, SWITZERLAND

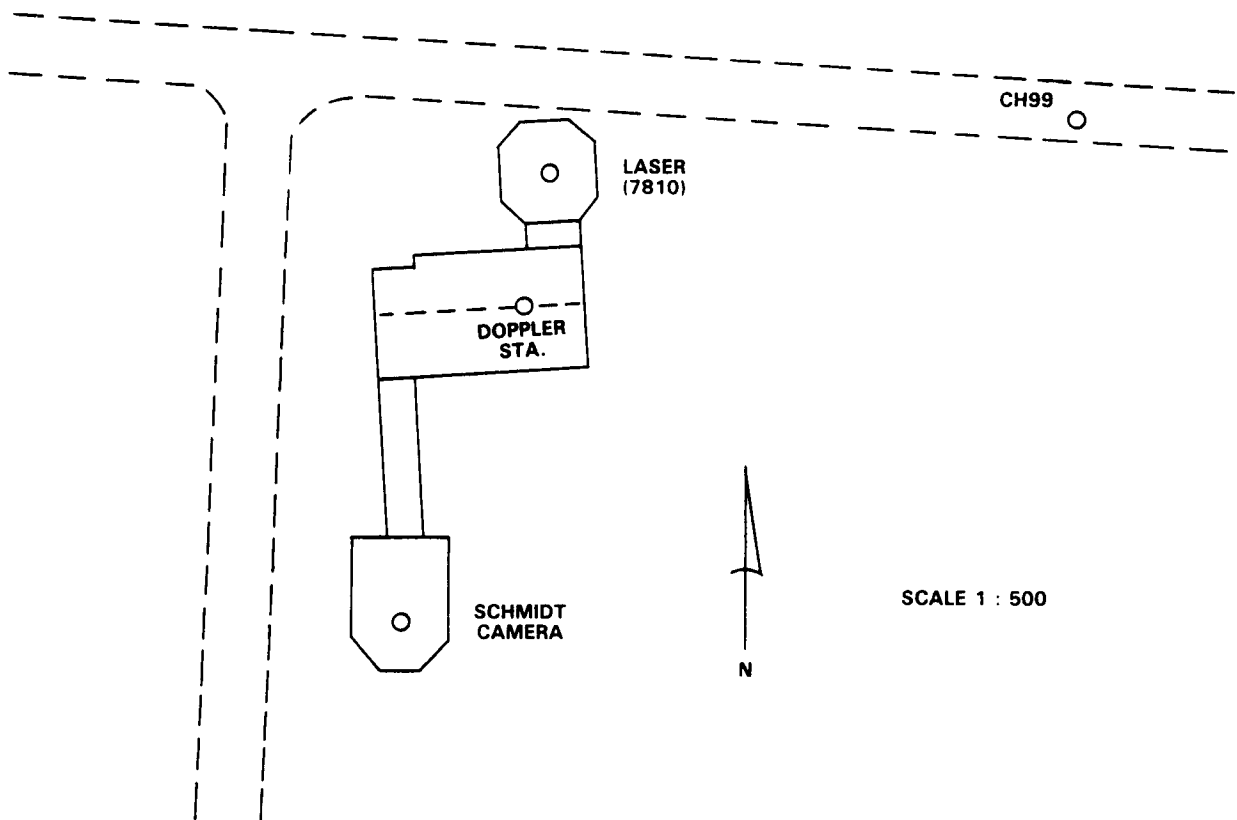


Figure 4-ZIMMER. ZIMMERWALD Site Sketch

-- PREVIOUS OCCUPATION INFORMATION --

Site Number: 882
Current Site Name: ZIMMERWALD
Location: BERN, SWITZERLAND

-- SLR OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----
7810	ZIMLAS	78104801	01-MAY-84	---	YES

-- VLBI OCCUPATIONS --

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date	Data in DIS?
-----	-----	-----	-----	-----	-----

-- No Previous Occupations --

SECTION 5. BIBLIOGRAPHY

5.1 Bibliography

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APPENDIX A. GENERAL SURVEY AND COORDINATE INFORMATION

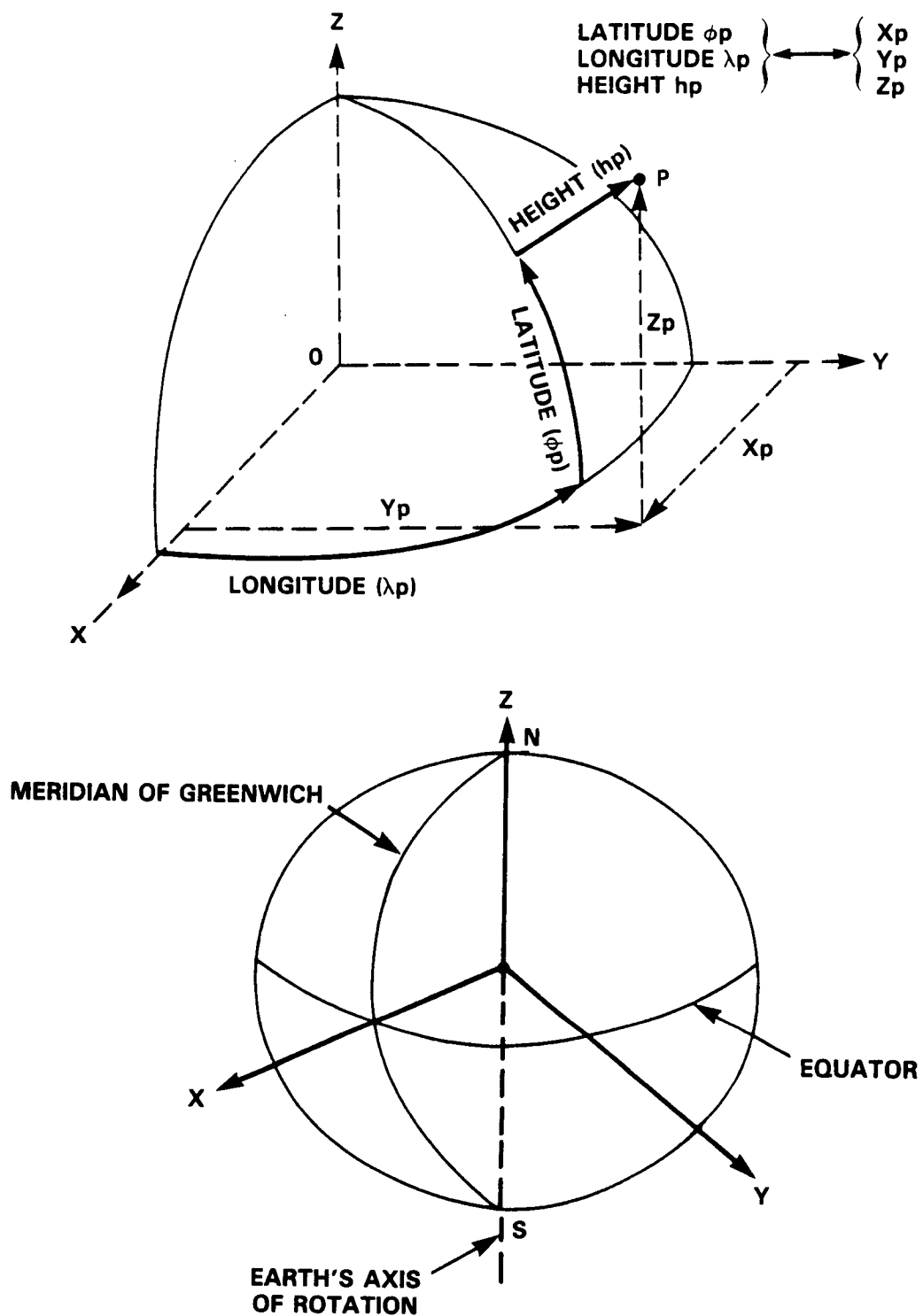


Figure A-1. Cartesian Coordinate System

The geodetic information in this catalogue is based on concepts illustrated in the following diagrams. For more information refer to documents listed in the bibliography (Section 5).

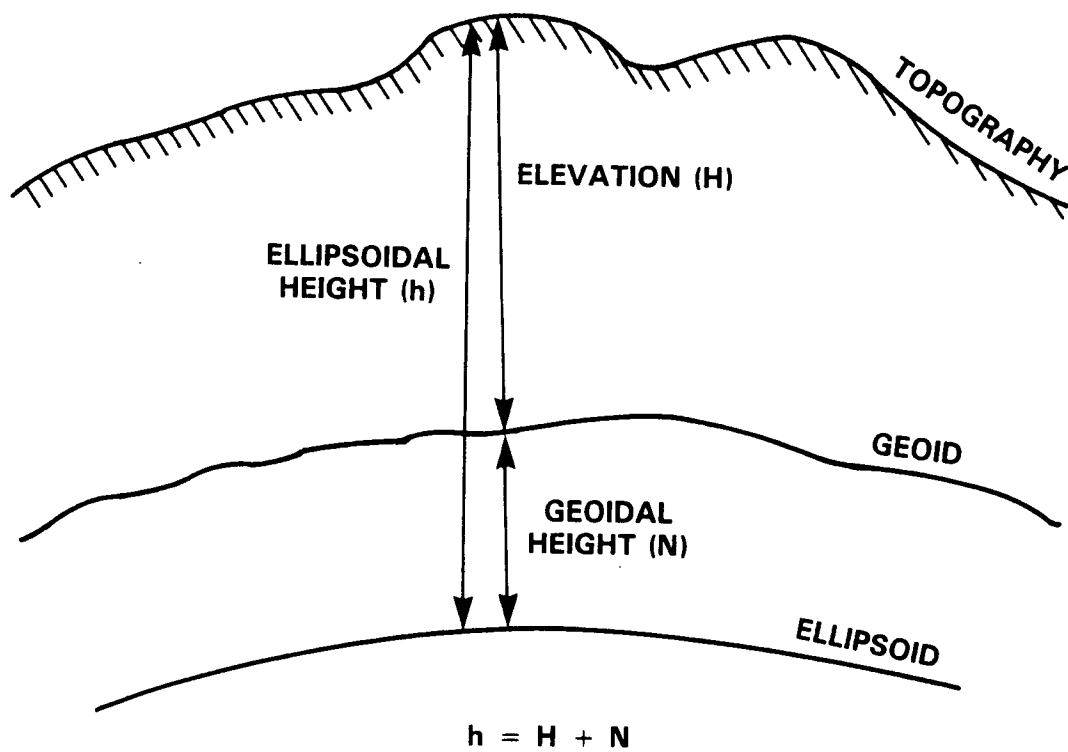


Figure A-2. Ellipsoidal Height, Elevation and Geoidal Height

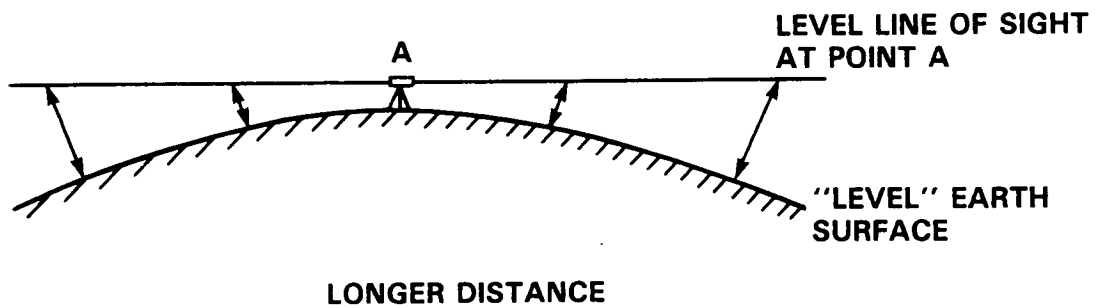
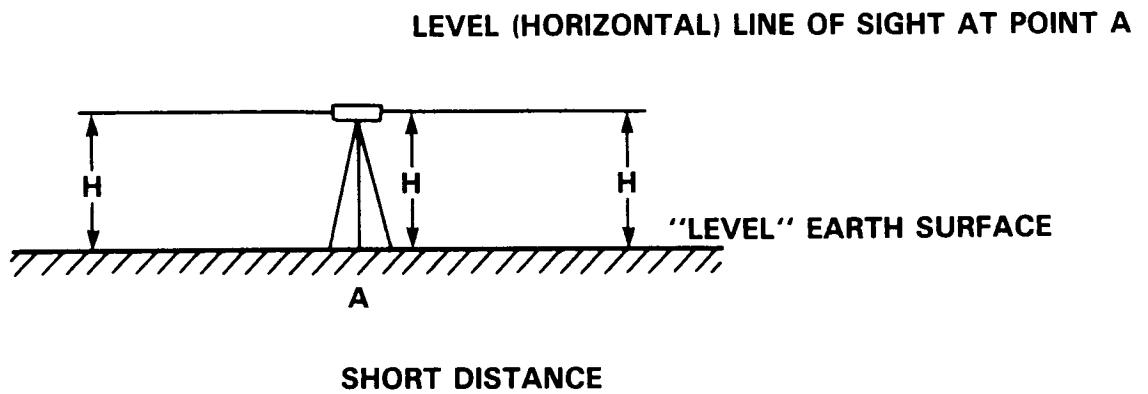


Figure A-3. The "Level" Earth Surface Over Short and Longer Distances

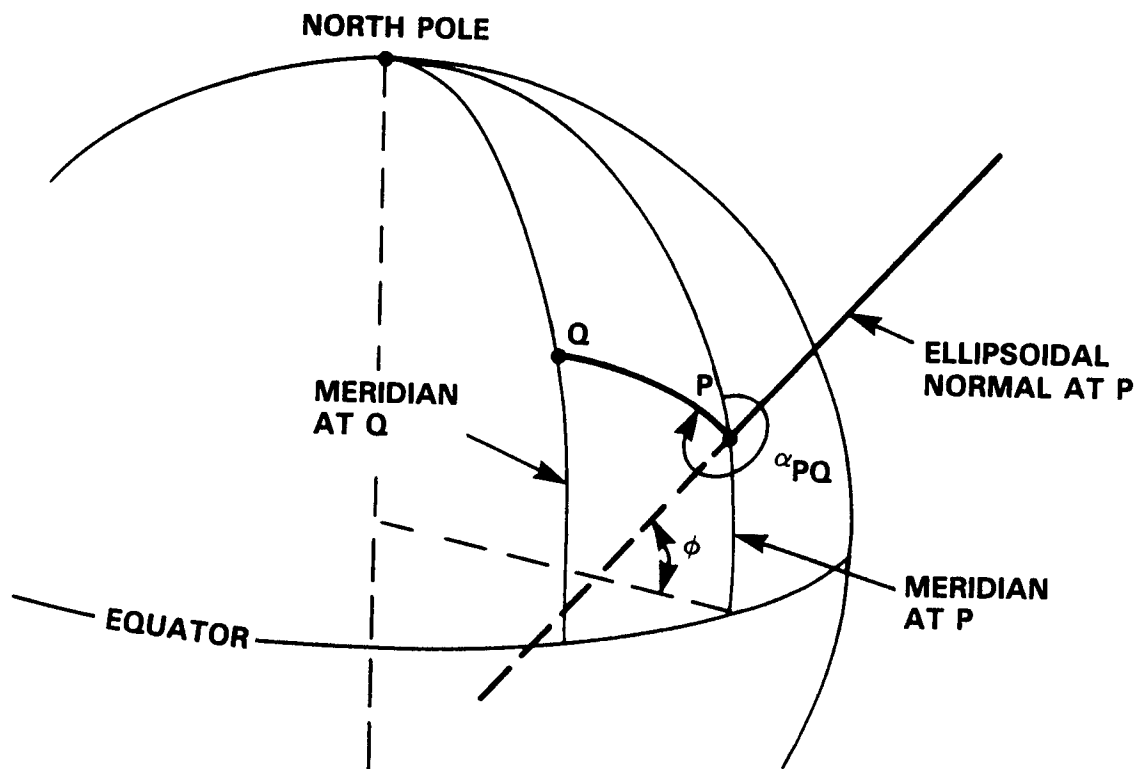


Figure A-4. Azimuth of the Line PQ

Report Documentation Page

1. Report No. NASA RP-1198		2. Government Accession No.		3. Recipient's Catalog No.	
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